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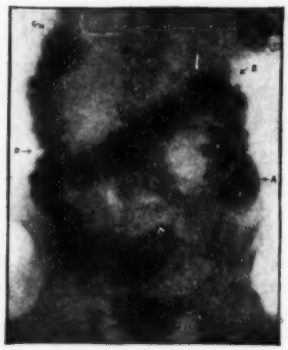

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Professional Strain and Suicide Among the American Medical and Legal Professions

A Suggestion for Prevention*

S. ADOLPHUS KNOPF, M.D., *(Univ. N. Y. and Paris.)*

New York.

I deem it a privilege to appear before you, learned judges, ex-judges, and lawyers, as well as my own profession, to discuss a subject in which I know you are as vitally interested as I am. In an attempted suicide the doctor is usually the first to be called in and then the case becomes a legal one and the lawyer is engaged to help the individual who attempted suicide to defend himself before a court of justice. John Rice Minor, in his essay "Suicide and Its Relation to Climatic and Other Factors" (Amer. Jour. of Hygiene, Monograph Series No. 2, 1922), says: "The person who commits suicide dies because his mind is unable to make a satisfactory psychic or social adjustment to his environment. Changes in the frequency of suicides may thus depend on changes either in the environment or in the individual."

In the discussion of my subject I shall not deal with our clients but ourselves. In other words I shall endeavor to find out, if possible, why there are so many judges and physicians who end their lives abruptly.

Certain of our medical and lay papers recently published some startling statistics concerning the number of suicides among professional men. In the United States during the year 1921, there were the following number of suicides: Physicians, sixty-nine; judges, fifty-seven; bank presidents, thirty-seven; clergymen, twenty-two; editors, ten; statesmen (members of legislatures), seven. Through the courtesy of Dr. George H. Simmons, the editor of the *Journal* A M A, I have come into possession of statistics of suicides among physicians in the United States for the past ten years which reveal a startling situation. These figures are as follows: In 1912, 36; 1913, 43; 1914, 27; 1915, 44; 1916, 39; 1917, 31; 1918, 39; 1919, 38; 1920, 32; and 1921, 69. This means that the number of suicides among American physicians has increased over 100 per cent during the past year as compared with 1920, and that the number of suicides among judges is exceptionally high. I have no explanation for this sudden increase, except perhaps that it is a delayed aftermath of the World War with its economic, moral, and psychic disturbances. Whatever the cause may be, this sudden increase is certainly alarming.

Not having had any legal training nor having had the honor of frequent association with the learned gentlemen of the legal profession, I can of course in this essay speak only of my observations among my colleagues, the physicians and surgeons. To my mind, it seems really pathetic that among the members of the profession whose prime object is to preserve life by protecting individuals and communities from infectious diseases, epidemics, and plagues, who as surgeons or physicians heal wounds, cure disease, comfort and console the suffering in mind and body, there should be the greatest number of suicides of all the professional classes In a paper dealing also with the subject of suicides observed among physicians, Dr. S. Dana Hubbard, of the Nw York City Health Department, who has investigated a very large number of suicides, says that he does not wish to be unfair to his professional brethren, but that unfortunately a thirty years' experience in the practice of medicine has furnished quite a few opportunities to him of seeing professional confrères terminating their lives too abruptly. He then adds the following very significant statement: "Many of these cases were masked officially for one reason or another so that the truth was hidden; nevertheless the fact remains, when the truth is known, that self-destruction was the cause and not that which was furnished by the death certificate."

* Read before the Society of Medical Jurisprudence at the New York Academy of Medicine, November 13, 1922.

In a recent letter to the New York *Medical Journal* the same author, in giving virtually the same statistics of suicides among physicians as Dr. Simmons, deplores this frequency of suicides, and says: "This record seems to indicate that the occupational strain is greater in medicine than in any of the other professions. Should not our scheme of medical practice, as relates to hours and relief, be revised and, if so, how should this be accomplished?"

My good friend Hubbard will forgive me if I seem to differ from him when I say that strain is not the only cause of the mental attitude which prompts this large number of colleagues to take their own lives. Many young men enter the profession with exalted ideas of obtaining wealth and fame. They should be reminded at the outset that the one who has decided to choose medicine for his life's calling must not do so with the idea that it will be easy to climb and to become a great surgeon or internist with a fabulous income. Only those who enter the ranks with an earnest desire to serve, to work for the good of others with no thought of self aggrandisement or gain of wealth, and to be content to make a comfortable living and cling to the highest ethical standard, will really achieve success. To those who have less high motives, who look upon the medical profession merely as a business proposition, there will be bitter disappointments and disillusionment.

Among those who cannot realize their unfitness for the calling of a physician and have not the courage to take up some other pursuit, there will always be some who may enter illicit practice, and because of this they may even be financially successful; then something happens and, facing exposure, they abruptly finish their existence.

Suicide statistics always reveal that the unmarried predominate over the married. Personally, I know any number of brilliant surgeons and physicians well able to support a wife and family, who remain single and as an excuse for this say that they have no time to get married. Some lawyers as well as physicians use the poetical phrase that they are wedded to their profession. This is all well and good, but no profession can replace the comforts of a home, the devotion of a loving wife, or the laughter of happy children. Therefore, my advice to the young doctor and lawyer would be as follows: Get married as soon as you can establish a home with an average degree of comfort. It does not cost so very much more than living alone. Carry an insurance according to your income. Live as normal, healthy, and sanitary a life as a physician would wish his patients to lead.

A dingy, cheerless, badly ventilated, dusty, and untidy reception room and office is depressing to the physician as well as to the patient and to the lawyer as well as to the client. The reverse condition—a neat, bright, cheerful, and well-ventilated office—is good for the mental attitude of physicians, lawyers, patients and clients alike. Whether belonging to the medical or to the legal profession, have yourself examined every year by some competent physician so that any insidious trouble may be discovered and treated before it is too late.

Self-preservation is essential for any one desiring to be successful in his profession. While the physician or lawyer should never neglect his medical or legal duties for superficial social functions, let him enjoy sound social life and participate in all that is good and uplifting and all that will cheer him in his work. Let him attend medical or legal meetings, but not associate exclusively with his colleagues where "shop" as a rule is the only topic of conversation. Among his recreations should be some which demand at least a few hours of outdoor life during the week.

Now as to the direct prevention of strain! Let us begin with the general practitioner in medicine, the one who is robbed of the greatest number of hours of sleep during the year by confinement cases, and who therefore has the greatest physical and mental strain imposed upon him. How can he arrange the number of confinements so that they will not tax his strength to the utmost as they sometimes do? Let two or three colleagues come to an understanding to arrange the confinement cases among themselves in such a way that they will be equally distributed and not cause the breakdown of one or another colleague. When a woman engages a physician to attend to her confinement, let the physician make it clear to her that if he cannot come at the time, Dr. so-and so or Dr. so-and-so will attend to her. It must be obvious that through such an arrangement no one will suffer, but the hard working physician will be benefited.

The general practitioner with a large office practice should bear in mind that he cannot do justice to his patients nor to himself if he sees too many cases at a time, and that he cannot make a difficult diagnosis when over-tired. The latter cases should be received by special appointment outside of the office hours.

It is an honor to be attached as attending physician or surgeon to a hospital; but it is unwise, unjust, and unfair to accept appointments as visiting physician or surgeon in many hospitals. It is unwise because the attending surgeon or physician puts on himself too great a strain by too much hospital service. It is unjust toward other colleagues equally able, who for one reason or another have not received a hospital appointment, and lastly, and by no means least, it is unfair to the hospital patients who cannot get the care and attention they are entitled to when the physician who sees them is himself over-tired physically and mentally. The judge or lawyer should also bear in mind that an overworked brain can never be keen and analytical and unprejudiced, qualities so essential for legal work.

One fact which in my opinion is perhaps the direct cause of more suicides among physicians than anything else in the use of habit forming drugs such as morphine, cocaine, and heroin. A few years ago, beside my tuberculosis service at the Riverside Hospital there was established a large service for the cure of drug addicts under the direction of Dr. T. F. Joyce. There were always a few physicians among them. I had many a chat with Dr. Joyce relating to the primary causes of drug addiction in physicians. It had been found that it was almost invariably the over-strain resulting from sleepless nights on account of confinement cases succeeding night after night, combined with attending to a large general practice during the day, which prompted the taking of drugs as stimulants.

To remove all possible doubt concerning the accuracy of this statement, let me quote from a letter received from Dr. Alexander Lambert, who has perhaps the largest experience of any one in this city in the treatment of drug addicts: "Of 1,700 drug addictions in private practice of my own experience or of my own knowledge, 405 have been doctors. The greatest strain has come from worry and overwork, 163 coming under that heading. They broke in the late 20's, around 30 and before 40 years of age, in the vast majority; i.e. 165 of the 405 when they were building up their practice and trying to swing it all without assistance and under the weight of responsibilities with but little savings."

Before a man gets into such physical and mental condition he should be told: Rest when you are tired; refuse night calls; get away from work entirely for a day or two or more if necessary, but never, never seek relief in drugs which you would not prescribe for your patients, and bear in mind that no matter how strong a will power you may possess prior to the habitual use of morphin you can no more control your desire for the drug once the habit is acquired, than the least intellectual or the least moral morphine, cocaine, or heroin-habitué.

To the young medical or pharmaceutical intern, who for curiosity's sake takes a few snuffs of cocaine or thinks he can safely experiment on himself with other narcotics, too strong a "Don't do it" cannot be pronounced. In many cases of habitual addiction, particularly when the victim is a physician who has no difficulty in getting all the narcotics he wishes, the doses are constantly increased in order to get the desired effect, until an overdose accidentally taken leads to a fatal result. The thought that he may never be able to master his craving, also often leads the physician-habitué to the taking of an intentional overdose. Nevertheless, even the chronic user of narcotics of no matter what kind, need no more despair of a complete cure than the chronic alcoholic, if he is only determined to co-operate with the physician in whose care he has entrusted his case. Moments of regret and an ardent desire to get rid of the degrading and life consuming habit are sure to come and the sooner this happens the better. When these moments do come, then is the time to seek the advice of a colleague familiar with the methods to cure drug addiction. In some cases it may perhaps be better to enter a special institution for that purpose. If the patient fears that his being an inmate in a local hospital or sanitarium might become known in his community, let him apply to the editors of the New York *Medical Journal*,, the *Journal* A. M. A., *American Medicine*, MEDICAL TIMES, or to the chiefs of the Health Departments of any of our big cities, and I am sure any one appealed to will gladly supply the inquirer with a list of reputable institutions where the unfortunate victim will have the best possible chance to obtain a thorough and lasting cure.

What are the psychical causes which may depress the physician to such a degree as to create a desire to finish his earthly existence? When the sympathy which he should always have for his patients develops into a morbid sentimentality; when he is too much affected by the hopelessness of some cases and cannot reconcile himself to the fact that what cannot be cured must be endured; when he cannot realize that even with all our advances in medicine and surgery there will be always cases which do not yield to treatment; and when he broods over such cases, there is danger of his mind becoming affected and of his growing morose and despondent. A wrong diagnosis with sad consequences, or failure in an operation, are serious matters, but not enough to cause the sacrifice of a second life. Every physician must strive to develop a sound philosophy of life. He must realize man's inability to know all the whys and the wherefores and that to do the best one can under all circumstances, is the only remedy. Life has its pains and also has its pleasures, but above all life is a duty, and duty well done will find its own reward.

Perhaps one reason why the medical profession has the sad distinction of furnishing the greatest number of suicides among professional men is the lack of a spiritual conception of life, a tendency to disbelief in all things spiritual, and an acceptance of the erroneous idea that to do away with the physical existence ends all. All religions teach the immortality of the soul, the existence of a physical and of a spiritual being, and the continuity of life as an entity. Those of us who have witnessed many death-bed scenes will long since have abandoned the medical student's conception of death. To many of the young followers of Aesculapius, the dissecting room is the last resting place of many and would be the finishing episode of the existence of all of us if we should have no one to take care of our "mortal coil."

The great physician-poet, Oliver Wendell Holmes, was once approached by one of his students during a lecture in the dissecting room with the following query: "Dr. Holmes, if there is such a thing as a soul please show me its location." The great anatomist's reply was "Only a fool will look for the soul with a knife." The greatest physician of the Anglo-Saxon race, Sir William Osler, Bart., Regius Professor of Medicine, Oxford, recognized authority on internal medicine throughout the civilized world, who died a few years ago at the age of 70, a victim of too strenuous work on behalf of the sick and wounded soldiers, during his lifetime was considered an honest agnostic by many of his admirers. And yet in his address on "Science and Immortality" at Harvard University in 1904, we read "Rather be mistaken with Plato than be in the right with those who deny altogether life after death, and this is my own *confessio fidei*." Among his effects the following note was found which he had penned a few days before his death: "Dear Friends, the harbor is nearly reached, after a splendid voyage with such companions all the way, and my boy waiting for me." His son, Lieutenant Revere Osler, had made the supreme sacrifice in the World War, and Sir William then felt sure to meet him. He had become convinced that physical death was not the end of conscious individual existence.

It is perfectly rational to believe (and with many the belief is so strong as to amount to conviction) that death does not end all, and that those who voluntarily end their physical existence must experience infinite regret for not having been brave enough to have kept on battling. Psychology teaches and psychologists have demonstrated that the mind of one individual can control that of another, not only in the hypnotic but also in the wakeful state, and even without a tangible medium of transmission—speech, writing, or signs. Each mind represents an individuality different from that of another, that is to say, an entity. This entity is demonstrated in hypnotism, psychoanalysis, and that wonderful phenomenon called telepathy. This individual self is also felt by all thinking people in their daily lives. As an entity it cannot perish or disintegrate but must persist in its existence; for the individual soul there is no "Nirvana" (going up into a great oneness or nothingness) where all its past can be forgotten.

The attempt has often been made by kind-hearted philanthropists to invite those who are despondent and heart sick and ready to finish their earthly exsitence to come to them and seek counsel and advice, and in a number of such instances a tragedy has been averted. There is an organization in existence in this city which has this unique mission and operates under the name of "The Save-A-Life League" with headquarters at 309 West 57th Street. Whether or not the establishment of an institution or bureau for this purpose would be helpful to prevent our despondent medical or legal brethren from resorting to suicide, I am not prepared to say. If some one in the profession with greater world wisdom thinks such an enterprise feasible, I will gladly serve under him. In the meantime, let all those who are sad in heart, depressed and despondent, take comfort and rest assured that if they will follow my humble sug-

gestions for the prevention of despondency, they will surely see a brighter vision and better prospects for the future.

We must speak of one other cause which has led quite a number of physicians to commit suicide, and that is financial failure and ruin because of stock speculation. Unscrupulous brokers with get-rich-quick and high-interest schemes usually make their attack first on the medical profession. They know that the average doctor has no business sense and no idea of the stock market, and as a rule he is considered by them as an easy mark. His mail is laden with offers of all sorts of sure and rapid methods to increase his wealth by the purchase of stock; mining, oil, automobile, or other kinds. He is visited or phoned to by glib-tongued brokers and not infrequently becomes their victim. As it happens so often, a seemingly considerable sudden gain skillfully brought about by dishonest means makes the physician think that he will do better by speculating than by practicing medicine. His mind is no longer on his work and he begins to neglect his patients. The outcome of it all is, alas too often, the loss of all the savings and an accumulation of debts resulting from stocks bought on a margin. Realizing a dark future and inevitable ruin, altogether too many splendid colleagues have ended it by an overdose of the easily accessible narcotic. The prophylaxis in such cases is plain. Stay away from the stock market, invest your savings in securities which are secure even if they bring only 5 or 6 per cent. In other words, accumulate slowly but surely and you will be happier in the end.

The thought of suicide often enters the mind when there is fear that there will be no home and comfort of life when the individual is no longer able to earn and when circumstances beyond control have prevented any saving for maintenance in old age. This happens occasionally and more often perhaps among medical men than becomes generally known. To prevent those of our colleagues from becoming despondent and rushing off to end their existence, who often in spite of years of labor have not accumulated enough to assure them a carefree existence at an age when they can no longer work, let us who are in happier and more comfortable circumstances unite to establish a home for homeless, poor, and aged physicians where they may finish their days in peace and comfort. If married, they should be allowed to bring their wives with them. To do all that can be done to make them happy and contented should be the aim of us who are still in the prime of life and able to help. To make the inmates of such an old physicians' home feel that they are not objects of charity but are entitled to what they receive, a society to which each member of the American medical profession might contribute a small amount annually, say one dollar, which would mean one hundred thousand dollars or more a year, might very easily be called into life. This, of course, should not exclude any generous donor who might wish to contribute a substantial sum toward a permanent endowment fund. Either the American Medical Association, the American Congress of Physicians, or some other national medical body should be made the depository or guardian of such a fund.

Such a fund and home for New York physicians has already been started and it owes its inception to Dr. W. Freudenthal, Dr. Robert T. Morris, and other prominent members of the New York medical profession. No doubt several of such homes in various sections of the country would be needed, but all should be under the supervision of an authorized and elected body of leading medical men of the United States.

I have reason to believe that even among the grateful patients of means there are many who would gladly help in such a noble and worthy work of justice, and I know that many poor would just as gladly give their mite, but this of course we would not wish to accept. We do not ask for charity. I do not like the word in this connection. Every doctor does his share of charity in his practice and it would be only a just compensation for the innumerable services he has rendered without pay to the sick poor and thus to the community. He should be assured of an existence without care and anxiety when no longer able to work by reason of old age or infirmity. Assurance that if he is but true to his calling, a grateful public and his well-to-do confreres will see to it that he shall not be in want, homeless or friendless when old age comes on, no matter what misfortune may overtake him, will surely prevent the doctor from thinking of self-destruction and shortening his career by a "rash act."

We may not always realize it, but our beloved profession stands as a whole in high repute in the eyes of the public and many are the prayers and the tributes which come from grateful patients who duly appreciate the physician's calling and the services he renders to suffering mankind. Let him who is despondent because he imagines that all his efforts are in vain and that the physician's life is not worth living, read the beautiful tribute recently pronounced by no less a man than the Hon. Alton B. Parker, formerly Chief Justice of the Court of Appeals of the State of New York, who says: "Where will you find another man to match the average doctor? He lives the true altruistic life, devoting himself unreservedly to others. His skill and time are yours on the shortest notice, in the blackest hour of night, and in the worst of weather. His devoted unselfishness, ready sympathy and healthy good humor but increase his gray hairs. I, for one, expect to find a neat M.D. shingle decorating very many of the more palatial Heavenly Mansions of Good and Faithful Avenue."

I wish I had the gift of words to properly reciprocate the compliment which has been paid to the medical profession by this distinguished jurist. I can assure him that we think just as kindly of the many noble men in the legal profession, which has given us not only most of our great presidents, statesmen, diplomats, and judges, but also many unselfish, devoted lawyers who are daily consecrating their time and talent to seeing that justice may be done to the innocent, and the poor protected from those who criminally seek to wrong them. I know from personal experience that just as there are many physicians who devote their lives to the poor so are there many lawyers who give their services gratuitously to the poor for justice sake.

The statistics which I quoted show that there are no less than 57 judges who committed suicide during 1921. This would seem indeed a very large proportion, much larger than among the medical profession, for there are not nearly as many judges in the United States as there are doctors. That overwork may in some instances be the cause of judges committing suicide would seem evident when we think of our overcrowded calendars of the average city court. More courts and more judges is the remedy.

If our federal, municipal, and county authorities would also see to it that our court buildings and the rooms in which courts are held are better constructed and kept in more sanitary condition, and do away with the depressing unhealthy atmosphere of many of our court rooms, this also would doubtlessly tend to render the minds of judges and lawyers clearer and more healthful.

(Continued on page 103)

Nephrolithiasis as a Complication of Pregnancy*

AIMÉ PAUL HEINECK, M.D.,
Chicago, Ill.

A somewhat exhaustive survey of the literature of the subject supplemented by a careful analytical study of my private and hospital cases leads me to formulate the following conclusions:

Renal lithiasis associated with, or complicating pregnancy has not received adequate study. Not infrequently, it escapes detection; not uncommonly, it is misdiagnosed and therefore injudiciously treated.

Nephrolithiasis occurs at all periods of the child-bearing age; in primiparae, deutiparae, and multiparae. It may coexist with concretions in other organs. It is observed in pregnancies normal or abnormal in type, location and evolution; it may be one of two or more pathological states coexisting with, and influencing or not, the evolution of an otherwise normal gestation.

Renal calculi, associated with or complicating pregnancy, are unilateral or bilateral, single, double or multiple and (like calculi in the non-pregnant) vary in location, shape, size, mobility, chemical composition and other characteristics. Their formation either antedates, is simultaneous with, or consecutive to, the first or any succeeding pregnancy of the patient at hand.

The calculi excepted, the calculous kidney may show but slight structural deviation from the normal; or it may be anomalous in type (single kidney, fused kidney), b. location (ectopic kidney), or c. structure (polycystic kidney, hydronephrosis, pyonephrosis). The anatomical anomalies presented by a calculous kidney are congenital, acquired, or both. If acquired, they are either of independent origin, or determined by the presence of calculi. Renal calculi, sooner or later, provoke structural kidney changes, degenerative, inflammatory, hyplastic or neoplastic, in nature.

Nephrolithiasis, occurring in pregnant women, determines the same anatomical changes, in the affected kidney as are found in the calculous kidney of the non-pregnant. These structural changes, the resultant of irritation, obstruction and infection, manifest themselves by exudative, proliferating and degenerative processes, often suppurative in character; rarely, neoplastic. Under the influence of stones, the epithelium of the renal tubules may necrose, form cysts or become malignant. In the absence of infection, the lesions presented are those of strophic and diffuse nephritis. Generally, the asceptic stage of calculus is brief. Infection, sooner or later, supervenes and gives rise to one or more of the following conditions: Pyelonephritis with or without abscess formation, perinephritis, sclerotic or suppurative pyonephrosis, and partial or complete conversion of the kidney into a sclero-lipomatous mass.

In nephrolithiasis, early diagnosis leads to the institution of logical treatment before irreparable kidney changes have taken place. An accurate diagnosis presupposes an intelligent interpretation of the subjective symptoms, of the bacterial, chemical and microscopical urinary findings, of the x-ray data and also the combined use of the cystoscope and the x-rays as employed in pylography. In every case, there should be a complete roentgenographic exposure of the urinary bladder of both kidneys and both ureters. The skiagraph is a permanent record. Skiagraphy shows (a) whether calculi are present in one or both kidneys; (b) the number, size and shape of the calculi; (c) their location-pelvis, calyx, parenchyma, or pro or hydronephritis cavities; (d) the presence of extra-renal calcareous deposits.

Pylography, a most valuable diagnostic procedure, should only be employed when the dangers attending its use are far outweighed by the information which it offers. It enables us to determine the presence or absence of pathogic changes in the renopelvic outline and whether a doubtful shadow is or is not extra-renal.

Pain, local and radiating, is the most important subjective symptoms. Its character and intensity are influenced by many factors; size, nature and mobility of the calculus or cal-culi, degree and acuity of infection, etc. It is provoked by walking, fatigue or exercise, and subsides with rest. Hematuria, intermittent or continuous, scant or profuse, and pyuria are also important symptoms.

In cases of persistent lumbar pain, a radiograph of the kidneys, ureters and urinary bladder is of great service to the clinician. Radiography of the urinary system has limitations, determined to a large extent by:

a. defective technique;
b. defective interpretation of shadows seen in the negative;
c. impossibility of obtaining a satisfactory negative;
d. defects in negatives;
e. caseous kidneys;
f. calcified mesenteric glands;
g. phleboliths;
h. bony deposits in the pelvic ligaments.

If the symptoms be mild, obscure, indefinite and indentification of the x-ray shadows uncertain, the medical treatment of renal lithiasis is to be instituted and the pregnancy is permitted to proceed undisturbed. After the puerperium, or better, after the period of lactation, operative treatment is to be urged in suitable cases.

As many renal stones are spontaneously expelled, a patient should be kept under observation for a limited period of time and nature given full opportunity to remove the stone or stones without recourse to surgical intervention. Operations for renal stones give such good immediate and remote results, that treatment with supposed solvents find few advocates.

In the absence of contra-indications, operation can be performed with safety up to the sixth month of pregnancy, to both mother and child. Up to that time in the absence of contra-indications operative treatment is to be instituted in cases:

(a) of renal calculi to large to be spontaneously expelled through the natural channels. Even if the symptoms be recent in origin, or slight in intensity, nothing is gained by delay. Be not too optimistic as to small renal calculi; of all calculi, they are the ones most apt to lodge and become impacted in the ureter.

(b) of multiple calculi, irrespective of site, size, or number.

(c) of recurring attacks of excessive pain localized to, or radiating from, the renal region.

(d) of profuse or continuous hematuria.

(e) of acute pyelonephritis, of cortical or pericortical pus formation and pus collection, and bilateral pyelonephritis.

(f) of a calculus giving rise to urinary retention within the renal pelvis. Such retention, always a men-

(Concluded on page 100)

* Abstract of an as yet unpublished paper read at the annual meeting of the Illinois Medical Society, 1922, Chicago, Ill.

Disuse Cripplings

Insidious Morbid Reactions Due to Misuse or Abuse, From Extremes of Disuse to Over-Use

FIRST PAPER

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The term disuse cripplings seems a good enough one to describe many ill effects of malfunctioning, the getting out of gear because of too little work done by muscles in accord with their design and structure.

The impulse to do sufficient work, to perform, or to actively function is often inadequate, needs to be aroused, fortified, guided into normal channels, and made to become a self-sustaining and continuous process in health or disease or after injury.

Disrepair could—under such circumstances—be reduced to a minimum, often surprising cures being effected through improvements by use, by a regulation of energizing, a balancing of push and pull, of impulse and restraint.

Disease effects are independent—except secondarily—of infection, trauma or katabolism. Most disuse infirmities disappear under a well directed self attention, a self rousing and guiding of energies, a bringing into use some form or degree of conscious purpose such as shall effect a readaptation of energies and of balancing the forces at work, or which can be made to work as they are meant to do.

Mere non-use or inadequate use produces one kind of disorder quite large enough to occupy the space at my disposal.

Closely allied in origin, and somewhat in kind, are other forms of misuse, such as abuse from uneconomic performance, wasteful, prodigal or frantic forms or degrees of misuse. Also there is the overuse kind of abuse. Excessive use seldom, if ever, occurs unless an element of anxiety, excitement or impatience coexists. In short fear is there in some of its modalities, even though merely the fear of not living up to one's expectations of one's self. Thus you can see how widespread are the effects of wrong use.

The general caption Disuse Cripplings serves well in my lectures on so-called physical therapeutics to visualize a large group of infirmities whose origins show similar starting points. They have many practical points in common. The means of repair are through revisions of conduct, notably getting back into sound habits of doing or not doing. The concept includes the most important part of so-called personal hygiene—a term so misused as to have become almost meaningless.

Since disuse and misuse effects are so readily noted in the motor and static mechanisms they will occupy first attention. None of us adequately appreciate their scope and full significances as yet. The neuro-muscular phenomena come in for consideration first and always. Here is the topic, in particular, of malfunctioning and reflex after effects, also of nutritive, biochemical and other. To do justice to these would involve a survey of the principles of orthopedic surgery.

So far as my readings go the orthopedists can teach us most, but they often fail to accredit to disuse phenomena the importance they deserve—such at least as we, of the internists or field workers, could wish.

Then the findings of neuropathologists could doubtless furnish immense data with which we should become familiar. So scattered, interwoven with other matters are they, that to properly search them is beyond any one's capacity. My efforts must be confined to setting forth such salient points as personal observations lead me to regard as of practical usefulness to general practitioners. If they should appear as important to others as they do to me, I sincerely hope some clinical neuropathologist will elaborate my hints and set me right where in error.

Next in order comes the allied topic of the neuromuscular elements in the functions of organic life, e.g., respiration, circulation, digestion, genito-urination, etc., not forgetting many associated problems as of disordered metabolism and—one yet little appreciated—of dermal and subdermal malfunctioning.

The topic while being sketched out has expanded unexpectedly. So many significances have appeared that this crude outline is offered mainly to serve as memorabilia by clinicians, to show slants and suggest cross sections for consideration and research. Too few as yet consider infirmities from the angle of disuse or misuse or abuse or overuse—hence also of fatigue effects.

Unless, however, diversified morbid phenomena do get attention from this angle of functional maladjustment, neglect, or of inadequate or ill-balanced performance, then suitable treatment may not become supplied. The material collected is used here only to supply points for just consideration, salient features in causation, or symptoms or indicia and directions for obtaining relief or repair.

Of course many of the observations made and points presented are familiar in themselves but their significance is overlooked. They justify attention from the standpoint of cure through improved methods and means of right use.

Over-use of one side, of one half of symmetrical bilateral structures, brings about—by compensation—under-use of the other side or group. Thus full competence of either side is lowered, hence follow wasteful, uneconomic energizings, disturbances, of poise in neuromuscular centers, of nicety and proficiency of motor, or static, or skeletel, or other structures. This asymmetry of kinetics has been studied in its relation to the spinal cord as accounting for some conditions of sympathetic disorders.

Secondary hypofunctioning or malfunctioning of associated or contained noble organs also occurs. This involves impairments in the processes of organic life.

Many individuals engaged in the arts or in specialized industries after achieving superior dexterity with, let us say, the right hand, form the habit—quite unconsciously—of using this skilled hand to excess for all sorts of purposes, domestic doings, arts, industries, sports, games, etc., to almost the exclusion of the other hand. A majority of these acts could be just as well performed—at times—by the left hand and thus save both energy and proficiency.

The right hand—not only its structures and nerve centers—is thus grossly over-used and impairments of dexterity are liable to follow, or stress and strain, or even exhaustion.

When carried far enough such one sided over-use may induce local over-stress, over-tension, causing tonic

protective spasm, transferred pain, relative disability or even decreptitude. The time or age element comes in here. Excess use may precipitate premature senescence in the over-used parts. A familiar instance of over-use is seen in the occupational neuroses, writer's cramp, telegraphers, also the arts, violinists, etc. (See paper by Author: "Arm Pains, Occupational Neuroses," International Clinics.) So of experts in the industries, the house painter, blacksmith, carpenter, factory worker, etc. The evil effects involve gross and fine structures, the nerves and exhaustion of centers.

In particular is it desirable for those artists who have paramount need to display the utmost delicacy of touch, tactile apperception, co-ordinated adjustments, to spare their expert hand from coarse exertions and in every possible way. Note the dangers to accident which lurk in habitually thrusting out the expert hand on every occasion inviting injury as well as strain. Many accidents any one can recall through such prodigal and foolish one handedness, such as trauma, wrenching, the crushing of fingers, joints. Patting a dog or a horse on the nose is often followed by a bite and serious injury to the hand. So of cuts or punctures from the use of sharp instruments, crushes from machines, especially those under high motor power. Meanwhile the left hand centers suffer from chronic disuse.

The biologic law governing bilateral structures is that each must be used with reasonable frequency or assymmetries will result. The lopsidedness which ensues often becomes so fixed as to become irremediable, as a visible deformation. Moreover self improvement advances in proportion as earnest well guided and directed and balanced effort is made at performance of proficiencies, in arts, games, competitions, etc. Skill grows in proportion as habitudes of parts are kept pliant and variegated. I am fully aware of the relationships of the hand centers to speech centers, through reversal of left handedness. My idea is for balanced or economic use.

Disuse Cripplings Through Habits

Organic functionings—all of them—may be viewed in accord with physiologic psychology, as a congeries of habits, or some say memories, whereby is formed and carried on development in structure and in action. These habits may be good and lead to best results, or others not so good or uneconomic, lead to unfortunate or deteriorative effects, dysfunction, and demand correction. All habits are modifiable, more or less, usefully, and in proportion as the self-guidance given be of the right sort or wrong sort, clear or obscure, also as influenced by compulsion of circumstance or exigency. Instinctive impulsions must also be tempered by restraint, and this leads to compromises, to protective adaptations. Among the hurtful effects will be found many human ailments, infirmities, disorders, both of body and mind, and can be made to become of less or greater disability or permanency in accord with the kind of attention they receive. Hence is seen the paramount need of early and intelligent observation and attention. It is not claiming too much to assume that as by such attention most ailments can be improved some can be done away with.

Motor habits, action patterns, tend to become more fixed, automatic, and to induce effects which must be reckoned with, many to be relied on, but others need correction. So much of pliancy, readjustability, as can be preserved should be, thus affording better opportunity for readaptation and by this revision encourage repair or needed improvement.

Illness is often disordered cellular habit and brought about by mistaken or uneconomic attempts to form new habits which may be in wrong directions or may prove to be beyond the capacity of the organism to readjust itself. Man dies, so Stockard says, of the disease susceptibility with which he is born. Weak spots exist in all and the organism tries to compensate for local energy deficits. The researches of Dr. Henry Winsor and myself seem to show there arise in maldevelopment of spinal column.

These errors are displayed by the organism reaching its limits of capacity for the formation of better habits of adaptation to the accumulation of stresses, to overexertion, to deprivation of needful things, to injudicious kinds and amounts of food, to the endurance of exposure, of shock, and of undue exposure when in a vulnerable condition to morbific agencies or insults or bacteria.

It is not so difficult for the individual to take note of what and where one has done wrong, or endured too much. Usually the impaired or disordered one becomes aware of what has happened but is incapable of doing the needful thing to restore equilibrium of energies.

Fortunately a wide margin of safety is provided for readjustment of habits within which one is fairly safe. This formation of protective habits defends one wonderfully and lasts for an astonishing length of time.

That which kills each one ultimately is the persistence of bad habits which may be only mildly evil, but in their mass beat down the body defenses. Safety lies in learning how to determine the nature and extent of these erroneous body habits and in correcting them in time. Thus each one is capable of self rescue from practically all ailments, and even from protracted infirmities, through the reformation of habits on an economic basis. Thus one can both recover and survive.

The process is called with some scorn 'personal hygiene" which—being mentioned too familiarly and too loosely—has lost its full significance and sense of potentiality.

Thus the highest and most forceful and workable of the welfare arts is the science of right habit formation and reformation, and the process is through better forms and qualities of use.

The term habit may include all the diverse and complex manifestations of energy in the mind and body mechanism as they come to be revealed as acting and reacting on one or other of the levels of performance. The concept is simple indeed but graphic and scientific —all deprecation to the contrary.

One thing is coming to be realized: that it is through and by better conscious purposive direction of controllable energies that one can raise the coefficient of efficiency through improved performance, conduct, behavior. The expert can with equal profit visualize the process and convey its meaning to the patient.

Thus we come to note the significance of the term Disuse Cripplings, whether we have in mind the cruder structures and functions or the more minute, elaborate, highly specialized tissues—from bones, joints, muscles, to the divagations of body chemistry, the vegetative or the autonomic nervous system controlling the regulators (ductless glands), or the mysteries of electronic manifestations which may prove to be the key to the whole series of life problems.

The causes of disuse thus expand, the more they are contemplated from nicely shaded impulses to spare one self effort, to save energies, through various degrees of disinclination to exertion—peculiarly marked in some temperaments—through diverse degrees of inadequacy or low energy content, to mere laziness, apathy, lethargy. All the foregoing may arise in those of excellent, or at least apparently unimpaired, health.

See articles in *American Medicine*, Sept. and Dec., 1922.

Then there are those who suffer some sort or degree of disorder, disability, or injury, and who "naturally" (that is, instinctively) save motor energy; who favor or protect a local infirmity with the laudable, but often exaggerated, purpose of expediting repair. This over "favoring" of one's self is often done, too, under medical advice with little or no guidance as to how or how much to avoid motion. Meanwhile secondary changes take place, infirmities progress, often to the extent of not only impairing the organism as a whole but to the lasting deterioration or disablement of the parts protected.

Here we come to the question of how much disuse is, or can be, of any real value, and where omissions of motor functioning begin to react or retroact upon structures or constitutional integrity.

Among the more valuable of clinical discoveries now coming to be realized, and utilized, is the fundamental truth that: performance of motor functioning is the prime need of economic and complete—at least the utmost possible—repair. This principle of early and particularized voluntary movement is becoming not only encouraged but guided and enforced, both in the medical and in the surgical domain.

Thus the topic of how much, what kind or quality or degree of motor performance comes to be one of the fine arts in repair and full restoration of a part, or of the organism. Thus disuse is raised suddenly to be an actual peril, and suitable or adequate use to be a clinical necessity. Here we have a new and efficacious means of fulfilling clinical obligations in not only the physical but often in the temperamental domain.

Closely allied to disuse is misuse, wrongfully guided use, both in directions, forms, velocity, and ill-balanced, often prodigal, and hurtful expenditures of energy. Thus we come to the closely associated problems of abuse, of stress passing into strain hence exhaustion of centers through protracted energy leaks, inducing effects of local exhaustion and of general depletion. Also we have the effects of aberrant kinds and degrees of compensation.

Here is—as illustration—the large domain of tonic protective spasm, whereby one impaired part (muscle group) transfers tension to another supplemental or accessory part and, when these parts are near exhaustion, the stress is again transferred to yet other parts. So that up and down the muscles of the back are commonly to be found, in alternating degrees, hypertension, criss-crossed and zig-zagged, inducing deformations so marked as to simulate scoliosis, hip joint, lumbo-sacral, sacro-iliac, knee, ankle troubles, defective arches, metatarso-phalangeal and other disorders downward, and also upward, shoulder girdle, nuchal or posterior occipital or other structures of the neck, head, etc.

Likewise—along with the mere structural (morphogenic) disorders—coexist sensory disorders, with transferred muscle hypertension, often associated with so-called transferred pains.

As I expect to show later many of these transferred pains arise in distortion of physical states, tension, spasm, visceral drag, overload bearing, etc., much of which is explainable by misuse, disuse, or abuse, and are relievable by right use, release of tension and right performance of motor function, especially of associated structures.

As a part of these problems is the element of habit formation (mentioned), good and bad, economic and prodigal or dishevelled habits, body maladjustments, maladaptations, both gross and minute.

For example: the motor mechanisms obviously do their work best when in good gear, in harmonious adjustment, as the mechanisms are in proper relationships and in accord with design.

Of the many, the innumerable instances of change of heart in respect to use versus disuse now coming up, carrying conviction to those of pliant progressive minds, but not accepted by those who have "completed their education," we may cite at randum two illustrations (and others in later communications), viz: Internal Medicine—"Heart Disorders." Surgery—"Open Joint Treatment," Willems and de La Panne—leg stumps, etc.

Case: This sort of case comes often to attention, during chance conversation:

A middle aged lady will say she has become so limited in her activities of late, had some trouble with her knee, her ankle, hip, etc., probably some metabolic disorder, some infection or mild trauma, or all three, and a disability occurs in a joint, a knee, or local weakness. "I am forbidden to walk much, to take any form of exercise; I feel a tendency to suddenly lose control, feel like falling. I fear I may tumble down in some place of danger, stairs, crossing crowded thoroughfares, etc. This gets worse and worse. The doctor has probably made use of the conventional and meaningless counsel: "be very careful, use the limb as little as possible, step cautiously and exercise the least possible." Of course the malady or deformation remains and becomes a permanent disability. Let me add here a summary of the valuable researches of my friend, Casper L. Redfield, Esq., of Chicago, in a personal letter of: energy values as influenced by use or non use:

"There are many fragments in literature relating to *use*, but I know of no one other than myself who has made a systematic study of this subject. Certain it is that there is nothing even remotely approaching the comprehensiveness of my investigations into the different kinds and degrees of use in the trotting horse during the 19th century. My work is the only one in which different kinds of use have been quantitatively measured and traced through successive generations. It traces:

(1) The extent to which continued use and disuse affects the later lives of active and inactive animals.

(2) The "sticking points" at which use and non-use give the appearance of being without effect.

(3) The use involved in the evolution of fast trotters from slow stock of previous generations.

(4) The non-use involved in the degeneracy of fast moving stock back into slow moving stock.

(5) The relationship of use to the production of secondary sexual characters.

(6) The conditions under which use transforms secondary sexual characters into ordinary characters and causes their transference to descendants of the opposite sex.

(7) The relationship of use in male and female progenitors to the qualities of descendants.

(8) The conditions under which excessive use in parents results in the production of precocious offspring.

(9) The conditions of use and disuse involved in implanting an entirely new instinct in horses.

(10) The effect of varying degrees of use on longevity. *These things represent the actual digging up of facts and not argument based on theory.*"

Functional competence is often hindered through wrong use, relative disuse, amplified by developmental or acquired defects, or a combination of both. The role of chronic disease is also potent in furnishing hurtful background effects, residua which induce further disuse, acquired inadequacies, disabilities and deformations whereby normal and necessary functional performance is not done and induces yet other infirmities.

Developmental inadequacies, asthenias, imbalances, retardations, in growth forces, etc., may arise in nervous mechanisms, cerebrospinal, sympathetic or autonomic or their centers, closely associated with endocrine inbalances. They are displayed graphically in motor, locomotor or static mechanisms, and in structures contributing to visceral support, internal and external, less plainly evident but equally significant in the group effects of visceroptosis, also in defective muscles concerned in function of eyes, ears, throat, etc.

Defects in bone development (hypothymus) in muscles, aponeuroses tendons, in joint ligaments, and other skeletel structures, etc. Defects of growth forces are displayed in the wide field of premature senility, a blend of inferior heredity and acquired defects through disuse or misuse.

Sensory defects or disorders serve as inhibitors of activities, proficiencies and endurances. Painful or distress states may be acute, as in frank pain or mere misery when awareness has sunk below the threshold. A tendency is induced to avoid activities, is often confused with weakness or fatigue or lethargy, because performance of movement or effort of any kind produces underfined wretchedness. Hence nerve centers and structures come to suffer from disuse, an incapacity arises for balancing mental or motor mechanisms, for readaptation, for emplacement.

Defects due to metabolic disorders encouraging disuse are shown graphically in over-weight, whether due to disease, defective thyroid or other impairments of oxidation; or to polysarkia, big heavy torpid muscles, usually also heavy coarse bones—percheron type, bulky limbs, big belly, large appetites, encouraging excessweight. An over-weighted individual is peculiarly liable to get weak ankles, foot arches, stressful pulls of the back structures, hence back or lumbar aches, and other impairments of burden bearing structures, often increasing during some acute illness or acute exacerbation of a chronic disorder. These often, after weight reduction, disappear.

Disuse of Natural Contacts With Earth, Sea and Sky

Since Antaeus achieved immortality by being thumped by Hercules hard down on his Mother Earth, and each time he struck the ground doubled his power, the impression has prevailed that it is a good thing to do likewise. There is much to support this view. There are described certain earth currents of electric force cited as necessary to stand in with, to breathe in, to submit our bodies to. Perhaps this was fore-shadowed by the mythical episode cited. Information is desired on this topic. Whatever be the determining factor true it is, as experience teaches, that by encouraging graduated exposures to temperature changes, to moisture and dryness, especially to winds, we derive benefit.

Natural habits or methods of living are proverbially and poetically extolled; we need not doubt their efficacy. What scientific reasons can be adduced to sustain this belief?

Powerful and dependable urges point the way; primal impulsions or instincts which may not be ignored. What is it that lies back of these longings to break away once in so often from civilized shackles, taboos, artificial restraints, sophisticated customs? How much is it desirable to encourage these calls back to Mother Nature's guidance? For one thing in order to get the best out of our inherent energies we must be supplied with—and aid in self supplying—liberating stimuli.

What of these can we appropriate and apply to our lasting advantage as well as immediate relief? How can we emancipate ourselves from the ever mutliplying complexities of an emasculating environment and still comply with binding or accepted social sanctions?

What are the more available and utilizable sources of power for remediation, for enhanced conservation, and re-establishment? Here we do well to pay attention most to modern scientific findings, least to traditional taboos, and be no longer swayed by wishful thoughts. The wish however, may reflect a dim, fleeting, but precious, phase of instinct.

The most obvious, familiar and available source of energy is the sun's rays. So impressive is this force it has often served as basis for special forms of religion, and among peoples of high intelligence and rich culture—notably the Astecs and ancient Peruvians.

Indeed the sun as the most obvious manifestation of beneficient force, is peculiarly suitable to impress primitive minds, ancient and modern. Minds today differ little in proportionate intelligence from those of which we have evidence 12,000 years or more ago.

As a healing power the sun's rays is gaining in confidence as steadily as any other dominant force. Analogies through electrogenic and electronogenic researches, and modifications seem focussing or fusing or running along parallel or co-operative lines. This not excepting radium and roentgen rays. Rollier now has in the Alps one group of hospitals of 1,500 beds for heliotherapy.

Perhaps no agency better illustrates the potency of use in contrast with disease, than heliotherapy. Nothing is added by man, not even suggestion; it is merely judicious adaptation and application of a force with which every one is familiar, has access to every day. The suffering organism is simply supplied with one essential thing in such gradations, directions and degrees as were heretofore not recognized or applied—and to his amazement recovers. The essential energies are there in him far beyond his need and only demand favorable conditions to be released, set in motion and to do their work.

Disuse effects assume a greater significance, and their prevention a higher obligation, when we come to realize the evidence set forth by Casper L. Redfield on the "Dynamics of Heredity." He has presented a biologic principle of increasing and expanding value, that through suitable use or through exercise of function—which makes structure—beneficent attributes are always achieved. He also demonstrates that those qualities which are exercised in the over-coming of difficulties are necessarily the ones which are transmitted and endow families and races with those capabilities which enable them to adapt later individuals and races to meet the requirements of new and strange situations. It is my aim to show how important is the exercise of persistent use in the maintenance of health and equally in the recovery of health. From time to time I hope to adduce further clinical evidence to that effect.

Prolonged chronic catarrhal gastritis may, by involving the submucous coat, so alter the anatomic components of the stomach as to eventuate in a change of the normal elasticity and capacity of that viscus and lead to dilatation. Acute catarrhal gastritis, as in instances of acute poisoning, ulcerations, and neoplastic growths, may affect the stomach without producing pyloric stenosis and thus lead through such pathological processes to dilatation, from loss of motility. Deaver asserts "It is not impossible that the gastric nerves may be the seat of disease, without there being any change in the gastric wall itself, and that by this means dilatation may ensue from loss of motility."

The capacity of the stomach cannot be taken as a guide in estimating its dilatation and Mayo Robson asserts: "A moderate degree of dilatation is common among a certain class, such as the mill operatives of Yorkshire and Lancashire, who live so much on tea and farinaceous food, or in those living on bulky farinaceous food, as potatoes."

The myasthenic variety, often designated, "gastric myasthenia" may depend upon a fatty or colloid degeneration of the muscularis, to want of nerve tone in the gastric nerves, or to organic disease of the muscle, due to fibrosis. In gastric myasthenia the stomach may be enormously distended and Bamberger[2] reports a patient, thus suffering, whose stomach held seventy pints of liquid.

In atonic dilatation all surgeons seem to agree that the patient should first be treated by lavage, electricity, special dieting and the employment of stomachics, in the hope of alleviation and cure, as is often accomplished. When, however, the patient's health and strength are failing, and little has been accomplished through medical means, resort should be made to surgery.

"Probably the most that surgery can accomplish," says Deaver, "is to alter the mechanics of the stomach and intestines that medical measures will become effective. Hence it is to be anticipated that a prolonged course of medical treatment will have to be carried out after the operation has been performed."

Various surgeons employ different procedures, each one claiming some special advantage in his particular choice of operation. In illustration, we mention Mayo Robson's partiality for gastroenterostomy; he asserts that "by securing thorough evacuation of the stomach at regular intervals and preventing gastric stasis the functions of the stomach may be completely restored by a further perseverance with medical and general treatment."

A favorite procedure in these cases is the operation of pyloroplasty, either alone or in conjunction with some form of gastroplication as advocated by Finney, of Baltimore. Castroplication has been performed by many surgeons in the past thirty years and while the operation has its advocates, it has given way to more brilliant methods that have assured more lasting benefits. Among its advocates are Moynihan and the late John B. Murphy. Deaver asserts that while his own preference in the past has been for gastrojejunostomy, as far as he can judge, surgical opinion at the present day is in favor of plastic operations on the pylorus, as opposed to gastrojejunostomy in any but obstructive cases.

In closing this subject, it is of more than passing interest to speak of a condition at times found in association with gastric dilatation, namely, gastric tetany. The term was first employed by Corvisart in 1852 and first carefully studied by Kussmaul in 1869.

It is brought about by some grave mechanical impediment to the onward passage of the stomach contents, resulting in dilatation of the stomach with hypertrophy. It varies in the intensity of the attack from a mere cramping of certain groups of muscles, such as of the legs and arms, to actual tonic convulsions much resembling tetanus and in the severe cases leading to actual opisthotonos. All sorts of strange theories have been advanced for the causation of the condition; the most logical include the following: The theory of auto-intoxication. Spasms due to dessication of the tissues. Reflex stimulation of the sensory nerves of the stomach. Creation of a poison developed in the stagnant stomach contents, and its absorption, resulting in powerful reflex stimuli to the nerve centers.

In nearly all the recorded cases of gastric tetany, dilation of the stomach has been present and with few exceptions the cause has been simple and non-malignant. In the vast majority of instances, it is quite agreed that ulcer is the etiological factor leading to pyloric stnosis and gastric dilatation.

It will be unnecessary to dwell upon the medical phases of this strange malady, except to state that all surgeons must rely largely upon the work of the neurologist in carrying out various tests, in studying the knee jerks, in noting the peculiar trophic changes, and in applying the tests of Trousseau, Chovstek, Erb and Hoffman.

The question of lavage raises an interesting question: Does not the precedure itself excite the occurrence of tetany? However, the employment of lavage is a rational means of treatment and it must be thorough. The essential treatment, nevertheless, is surgical, and most surgeons advocate draining of the stomach by means of gastroenterostomy.

Although three score years and ten have passed since gastric tetany first attracted the attention of the profession, nevertheless, the subject is still engrossing the attention of students of surgical science. The investigations into internal secretions promises to explain, perhaps quite thoroughly, the occurrence of this strange condition. The theory of auto-intoxication so long prevalent lacks confirmation, obstruction of the pylorus preventing intestinal involvement.

The views offered by Fleig seem to be rational and are widely accepted. Fleig contends that there exists an auto-intoxication with dehydration, which alters the chemistry of the thyroids or parathyroids. In support of dehydration as an important factor, he asserts cases of marked gastric tetany relieved by the introduction of fluids; to similar cramps of muscles where dehydration is a marked feature, as in cholera morbus, dysentery, etc.; the occurrence of muscular spasm in laboratory investigations by concentrating the blood through the intravenous injection of hypertonic substances such as sodium chloride.

218 South Fifteenth Street.

[2] "Anomalies and Curiosities of Medicine," Gould and Pyle.

Results in the Treatment of Wassermann-Fast Syphilis by Intravenous Mercuric Chlorid.

Conrad and McCann report results of treatment of sixty-two Wassermann fast cases, with intravenous injections of mercuric chlorid at the Barnard Free Skin and Cancer Hospital and the Washington University School of Medicine.

All patients were started on 10 minims (0.6 c.c.) of a 1 per cent. solution of mercuric chlorid in physiologic sodium chlorid solution. Dosage was increased by 2 minims (0.1 c.c., at each treatment until patients were receiving 2 c.c. at a dose. If at any time signs of toxicity appeared dosage was reduced by one-half and then slowly increased to the maximum dose. Patients received twenty intravenous injections, and were then given a four weeks' rest. At the end of that time a Wassermann test was made and treatment resumed.

Two points are important in administering the drug: 1. Be certain that the needle is free in the vein, and not in the walls of it. 2. Form the mercuric albuminate in the syringe before injection.

Results show that forty of the sixty-two patients treated had negative Wassermann reactions at the end of the treatment. Eight remained the same throughout the courses of treatment. Distinct clinical improvement was noted in a number of cases in which the Wassermann reaction remained the same.—*Arch. Derm. and Syph.*, July, 1922.

Dilatation of the Stomach From the Surgeon's Viewpoint

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Philadelphia

Years ago dilatation of the stomach, in surgical parlance, referred to the enlargement of that viscus, the result of pyloric obstruction.

As early as 1872, Fagge brought the subject of acute dilatation of the stomach to the notice of the medical profession, and within very recent years, Neck (1905), Conner (1907), and Ruth (1913), have made special study of the subject and have analyzed a large number of reported cases.

Although dilatation of the stomach is primarily a medical condition, not infrequently found in association with the acute infectious diseases, it may arise independently of all disease and manifest itself by symptoms of obstruction.

What makes the subject one of importance to the surgeon is that gastric dilatation is a post-operative complication, not only after abdominal operations, but may occur as a complication after any other operation. Cases on record reported by surgeons of eminence offer, at times, the strangest kinds of etiology that apparently caused gastric dilation.

"When I was on the acting staff of the Leeds Infirmary", says Mayo Robson, "seven of such cases came under notice in a comparatively short time. A man of 55 was admitted under the care of a colleague as acute intestinal obstruction, and the stomach was opened and drained without relief. At autopsy nothing was found to account for the dilatation. One occurred in a woman of twenty-six, a month after excision of the hip, and death occurred on the fourth day. The only apparent cause was the eating of an apple, which was followed by uncontrollable vomiting, and at the post-mortem examination, beyond dilatation of the stomach and duodenum, nothing was found to account for the dilatation. One case had had a choledochotomy performed ten days before and the wound was healed by first intention, when suddenly without apparent cause, she began to vomit, the abdomen suddenly distended, the urine was suppressed and death from collapse occurred within two days." Robson reports many other similar cases but these will suffice to illustrate the subject under review.

In the vast majority of instances, no apparent cause has been discoverable at autopsy to account for the condition, even when the dilatation followed an operation. Box and Wallace believe the explanation lay in the pressure of the distended stomach upon the third part of the duodenum. Albrecht believes the dilatation the result of pressure of the superior mesenteric vessels on the duodenum, which they cross transversely, while Pepper and Stengel ascribed it to spasm of the pylorus. Deaver and Ashhurst[1] believe that . . . . "It is a much more likely thing that the anesthetization, and the lifting of the patient on and off the stretcher and the operating table, added to the frequently unusual and strained positions in which patients lie, during and after an operation, are all factors which would tend to produce an enteroptosis of the small intestines, or would in some way produce a kink at the duodeno jejunal flexure, and so would be productive of the state of affairs usually found in connection with acute gastric dilatation. Added to these causes, which might be present in every post-operative case, would be the direct interference with the viscera in abdominal operations of all kinds. Especially would this be the case in operations on the bile passages, where the duodenum and the small intestines are constantly pressed by gauze pads out of their normal relations; and in the operations for the removal of large ovarian cysts or uterine myomata, where the small intestines would naturally fall into the emptied pelvis and occupy a position which in that individual would be strange and unusual."

Upon post-mortem the stomach is found to fill practically the whole abdomen. It is sharply bent upon itself in the form of a large U. The site of obstruction is usually found in the vicinity of the duodenojejunal flexure, in contradistinction to the medical interpretation of obstruction at the pylorus. In the dilatation, as veiwed by the surgeon, the pylorus is rarely obstructed; rather is it dilated, while the small intestines are empty and pushed down into the pelvis. Peritonitis is not found in association. This latter statement is offered because of the confusion that not infrequently exists in the minds of not a few surgeons in mistaking tympanitic distension of the stomach and peritonitis with acute gastric dilatation.

The condition manifests itself suddenly with acute pain followed by vomiting which affords relief. As distension becomes marked, there is embarrassment to respiration and circulation, with an expression of intense anxiety. The pulse *rises* and the temperature *falls*. Thirst is unqunchable, and the urine at first much diminished in quantity, leads to anuria. The eyes are sunken but bright, the tongue is heavily coated, the patient is delirious or comatose; death appears imminent. In a word symptoms of a profound toxemia are in evidence.

The early recognition of the true nature of the affection and the correct application of surgical treatment has in the last few years reduced the mortality from 75 per cent. to less than 25 per cent.

All surgeons believe in the prompt and continuous use of lavage. After emptying that viscus, the patient may be placed on the left side with the foot of the bed elevated so as to bring the pelvis on a higher plane than the diaphragm and thus mechanically favor the restoration of the stomach to its normal position. Many surgeons, including Deaver, the late J. B. Murphy and Robson, follow this plan, supplementing this by placing the patient flat upon his face after evacuation of the stomach. When posture fails, resort is made to operation. Discovery of any kink is at once relieved; but often more complicated measures are required. The choice of operation will depend upon the condition encountered as well as upon the skill and ingenuity of the surgeon. Deaver favors, in most cases, gastrojejunostomy, as does Mayo Robson, who invariably gives a hypodermic injection of strychnin, believing that not only does the medicament stimulate the heart, but seems to exert some peculiar beneficial action. In 1900, Rob-

(Concluded on page 99)

[1]Deaver and Ashhurst, "Surgery of the Upper Abdomen." P. Blakiston & Co., 1921.

THE MAKING OF SURGICAL CATGUT

H. J. Dobbs,
New Brunswick, N. J.

Ligature!!! the surgeon cries, and his nurse, who with years of experience knows exactly what is wanted, presses a strand of catgut into his gloved hand, and its use completes another link in that long chain of surgical technic which brings to a successful conclusion any operation.

At such moments as these there is not time "to reason, why," but in the quiet of leisure hours one is often tempted to probe more deeply into the little things that really matter, the adjuncts which are, in the ordinary course of our daily lives, accepted facts.

The story of the manufacture of surgical catgut will undoubtedly appeal to some whose thirst for knowledge is deeper than its actual application, and so these lines and the photographs attached will throw some light on the many obstacles which beset the path of the manufacturer in his efforts to produce a product that combines all of the virtues of perfect surgical catgut.

The catgut industry of the distant past came into existence through the manifested requirements of the musical professions, but in those days surgery had not attained that state of perfection, that in succeeding years crowned with success the labors of its most ardent advocates.

While it is true that much of the present day material assumes its commercial appearance in the workshops of Europe, in great contrast to this is the work conducted in an especially equipped surgical laboratory where one thought predominates and guides a staff of qualified technicians in observing the obligations assumed by the surgeon and themselves.

For years it had been the fondest hope of the surgical catgut manufacturer to be able to control every phase of the operations from the time the intestines were taken from the sheep, until the sterilized strands finally reached the surgeon's hands, and although for a considerable period control, to a limited extent, had been exercised, it has remained for the present to establish a laboratory, in proximity to the source of supply, wherein might be adequately discharged the manufacturer's obligation to secure the attainment of an ideal.

So large is the present day demand that it is difficult to visualize how this is adequately met, but the fact remains that there are single catgut makers who are able to handle the intestines of nearly two million sheep per annumf (or six and one half thousand per working day) in the production of surgical catgut.

The intestines of the sheep are from sixty to seventy feet long and in structure much the same as that of the human being, but for surgical purposes and in order to obtain the very finest product, only about one-third of the total length can be utilized—this portion is about twenty-four feet long and is known as the "narrow end" since it commences at the stomach—the portion that gradually widens out and eventually joins the large intestine, is disposed of in other quarters and usually is converted into sausage casings.

Appreciating the fact that putrefaction very quickly commences, unless the intestines are handled almost immediately, it has been found advisable to erect these laboratories close to the original source of supply in order that the many processes through which the gut must pass, can be commenced within a very short time after removal of the intestine from the animal.

The intestines when received, contain much fecal mass and fat nodules (Fig. 1) which, to avoid decomposition, must be promptly removed; therefore, the initial stage in the manufacture of catgut is known throughout the trade as "stripping." This, like so many of the twenty-four subsequent operations previous to sterilization, is performed by hand.

"Stripping" in the main, consists of drawing the intestines through the closed hand, which by exercising a peristaltic-like pressure, removes the gross dirt (Fig. 2) and in this state they are transferred to barrels of cold water for further treatment.

They then have to undergo "conditioning," to effect which the stripping process is similarly repeated for several days—each daily manipulation and transferrence to tubs of clean cold water helping to still further remove the dirt and fecal residue (Fig. 3) until the gut finally loses its original light pink color and reaches the proper state or "condition."

A very watchful eye has to be kept over the gut while passing through these stages, as decomposition is very likely to manifest itself; thus a Sunday or a holiday does not go by without the customary inspection and handling.

The conditioned guts (F 4) are now transferred to barrels containing an alka. solution and placed in front of the splitters table, from which they are removed by hand, pulled over a curved tapering peg and drawn against a vertical razor-edge knife which serves to split the gut into two parts. The natural twist of the intestine (Fig. 6) automatically adjusts itself to the curved splitting rod with a result that one half of the intestine is pulled to the right of the razor edge, and the other to the left. Thus will be accumulated on one side of the operator a pile of "rough-side" half-guts (Fig. 10) termed rough, on account of their being the mesenteric surface) and on the other, a pile of "smooth-side" half guts (Fig. 11).

The smooth-sides which are a trifle longer, due to the fact that they are that half of the gut which follows the outside (or longer) curve, have a narrow thread of tissue (or membrane) adhering to the entire length, (Fig. 5) These must positively be removed, for the reason that if allowed to remain, owing to their only slightly adherent qualities they would be likely to become loose and materially interfere with the more delicate operations to follow.

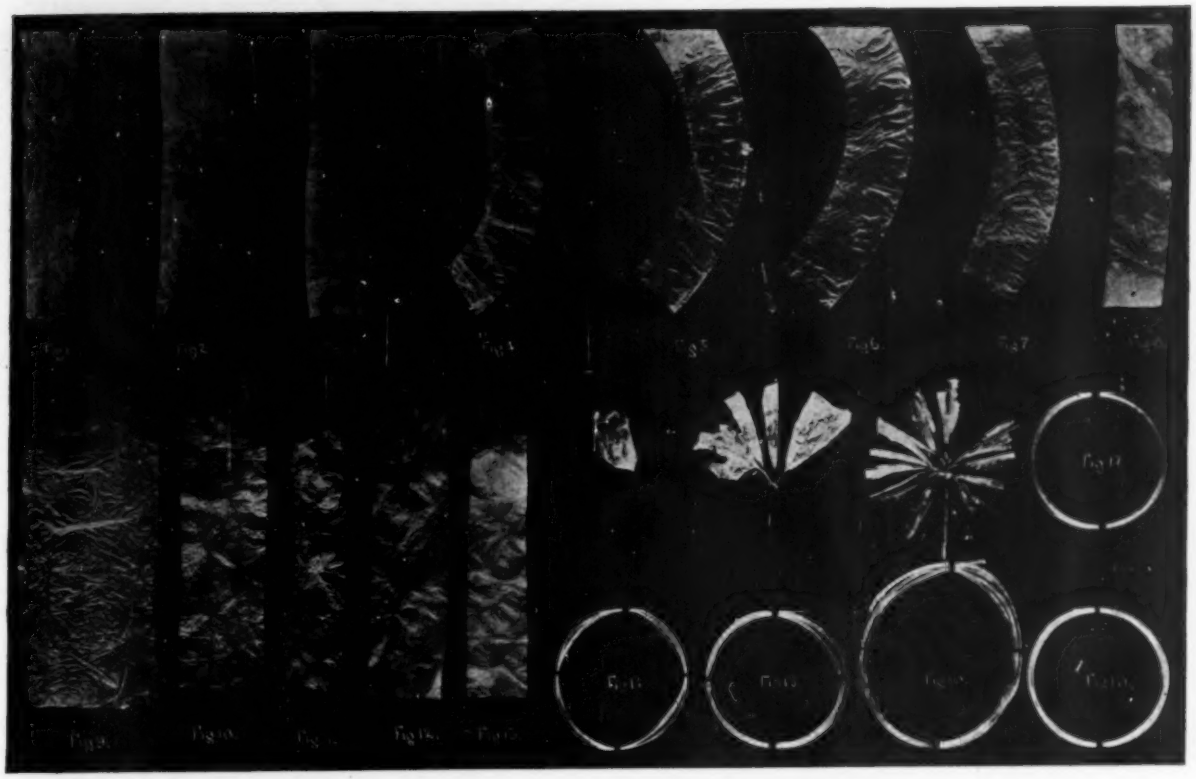
Threading (the removal of the threads) is a difficult undertaking and requires considerable manual dexterity which can be acquired only through years of constant practice.

A few inches of the smooth-side half-gut is thrown over an upright board and scraped with a dull edged instrument until the thread is loosened; thereafter the loose thread is pulled back over the top of the board and drawn by hand throughout the entire length.

The sheep's intestines, like others of the animal kingdom, consists of four distinct coats, the inside, or mucous layer with its numerous villi, or spongy masses of glandular and epithelial cells and the outside or serous coat, while between them will be found the *muscularis* and submucous connective tissue.

Besides the fact that the mucous coat can serve no useful purpose, there would be a great tendency to decomposition if it were allowed to remain; therefore with this fact in mind it becomes necessary to eliminate this part of the intestinal structure, while other objections such as the brittleness of the serous coat, gradually reduces the available material to the submucous connective tissue, and it is this, and this alone, from which the best surgical catgut is manufactured.

In order to produce a reaction similar to that manifested by nature, it is necessary to resort to some alka-



THE MAKING OF SURGICAL CATGUT

Fig. 1. Intestines as taken from the sheep, containing feces and fat nodules.

Fig. 2. Whole gut after first stripping, which is the initial stage in removing foreign matter.

Fig. 3. Whole gut after further stripping—here the gut is nearing the state or "condition" for manipulating.

Fig. 4. "Conditioned" gut—the tissue has now lost its original light pink color and is ready for splitting.

Fig. 5. Showing the thread or membrane which is adherent to the "smooth-side" of the intestine—this thread must be removed by hand before the tissue can be used for the purpose of making catgut.

Fig. 6. The intestine reduced to its submucous layer—this also illustrates the natural curve of the intestine—the "smooth-side" follows the outer curve and is therefore a trifle longer than the "rough (or mesenteric) side" which follows the shorter curve.

Fig. 7. The submucous structure after having undergone a bleaching process.

Fig. 8. Whole gut having undergone all the processes including a treatment to impart suppleness.

Fig. 9. The gut as described in Fig. 7 has here been split open.

Fig. 10. Illustrating the "rough-side" of the split intestine before undergoing the final process.

Fig. 11. The "smooth-side" of the split intestine before undergoing the final process.

Fig. 12. The finished "rough-side" strip after all processes including the suppleness treatment—ready for spinning.

Fig. 13. The finished "smooth-side" strip after all processes including the suppleness treatment—ready for spinning.

Fig. 14. One strip of "rough side" tissue twisted into a strand of fine catgut.

Fig. 15. Two "rough" and two "smooth" strips twisted to form a larger strand of catgut.

Fig. 16. Showing the sixteen individual strips which compose a strand of catgut this size.

Fig. 17. A coil of unpolished catgut.

Fig. 18. A coil of polished catgut ready for sterilization.

line solution with a view to loosening the various intestinal coats and constant experimentation has demonstrated that the method adopted brings about an ideal condition.

The removal of the useless tissue is a delicate operation, requires most accurately adjustd machinery and above all else the exercise of most skillful workmanship; the various processes are therefore in the following sequence.

(1) Cleaning:—The half-guts are drawn between a revolving drum and a rapidly turning paddle wheel in the presence of a constant stream of tepid water, serving to wash away the spongy mass of mucous tissue as it is brushed off.

(2) Scratching:—A scraping process which is conducted by hand—here the mucous-free strips are hung over a blunt hook and the hand is drawn with a downward motion so that the gut is allowed to pass between the fingers.

(3) Sliming:—This is a long process demanding considerable vigilance. The mucous-free and scratched strips are now placed in a machine that repeatedly draws them between a pair of blunt edged scrapers and a heavy weight that serves to press the tissue against the blunt edges. This concluding a two weeks' treatment finally completes the removal of the serous and muscular layers, leaving the submucous connective tissue, which alone should be used for the manufacture of surgical catgut.

The next step is the cutting of the strips into proper lengths and looping the ends to facilitate spinning; however before spinning they must first undergo a bleaching process (Fig. 7) while a further step in the preparation of catgut is a treatment serving to impart greater suppleness to the final product (Fig. 8).

While still in a moist state several of these finished strips are twisted or spun together serving to form one solid strand (Figs. 14-15-16) after which they are attached to pegs and stretched between posts until dry.

The dry, rough strand of catgut (Fig. 17) is now removed to a glass-walled polishing chamber where the process of polishing is conducted by hand and by experts, upon whose delicacy of touch largely depends the integrity of the finished strand. (Fig. 18.) Then after a simple washing they are gauged to correct sizes, and made into coils in preparation for the commencement of their second long journey, namely that of sterilization.

THE REVOLT OF CIVILIZATION

CASPER L. REDFIELD,
Chicago

Lothrop Stoddard is the author of a new book entitled "The Revolt Against Civilization." The difference between that title and the one at the head of this article is a difference in the preposition, and that difference represents the difference in outlook of Stoddard and me. As Stoddard's book contains 268 pages, I can do no more here than touch or comment upon some of the high spots.

The book is roughly divided into three parts; first, that which gives a historical account of social movements in past centuries; second, that which deals with certain biological problems; and third, that which prophesies for the future. As long as he sticks to historical accounts he is on safe ground, but those parts of his book which deal with biology and prophesy are fine examples of misinformation given in dogmatic form. He is not so much to blame in this as he is really nothing but an echo of misinformation given out by others.

He divides human beings into the superior, the mediocre and the inferior—the last of which he calls the "Under-Man." The thing which worries him is the rapid multiplication of the inferiors, and the actual decline in numbers of those he calls superiors. This impels him to say that "never before have social conditions been so destructive of racial values, as today." His remedy is to encourage superior people to produce larger families. As Stoddard is a bachelor, his idea seems to be to let George do it.

Right here we will raise a question as to the validity of Stoddard's definition of what constitutes superior stock. He seems to think that superior stock is made up of that part of the population which has such a bad attack of brains that it is unable to reproduce, but that is not nature's idea, and it is probable that nature is the highest authority. Any way, she has the final say-so. According to nature, that stock is superior stock which can keep alive through unending generations, and can continue to advance while it is keeping alive. If Stoddard can find any branch of the human family which is dying out because it is not reproducing offspring enough to keep it alive, he may set down that branch as being decadent. Brains are important things, but a person who has his brains developed to the extent that he is lop-sided is not good material, from a racial standpoint.

Before we proceed further with a consideration of Stoddard's views, let us go back to the foundation upon which he builds. That foundation consists of the assertion that "Lamarckism was merely a modification of the old environmentalist philosophy," and that "today this amiable doctrine is exploded."

Right here I challenge both of those statements as being untrue, and as being nothing but echoes of baseless assertions. Lamarck's theory is not a theory of the effects of the environment, and it has not been exploded. Even its opponents admit that in spite of the numerous times they have killed and buried it, it is still very much alive in the scientific world.

It is conceded that Lamarck lived and had a theory. There are two translations of Lamarck's writings, and it is to these that we must look to see what his theory was. One of these translations is by A. S. Packard, and was published in 1901. The other is by Hugh Elliot, and was published in England in 1914. Lamarck has much to say about the environment, but he is careful to state that the environment does not accomplish the results he is talking about. He says: "whatever the environment may do, it does not work any direct modification whatever in the shape or organization of animals." (Packard's translation, pp 294-5; Elliot's translation, p. 107).

Lamarck says that continuous exercise of an organ strengthens and develops it.

I think no one disputes that statement. It is common knowledge and common practice in the training of athletes and horses.

Lamarck also says that the power developed in an organ by exercise is "proportional to the length of time it has been so used." (First Law, Elliot translation, p. 113; Packard translation, p. 303).

This is not quite so obvious, and Lamarck furnished no proof of the statement. But I have furnished that proof in my "Human Heredity," and in numerous articles published in various journals. That proof extends through animals, plants, bacteria and protozoa. In fact, the proof shows that continuous development under continuous exercise is a fundamental characteristic of protoplasm in all of its forms.

Also in his first law Lammarck gives the reverse of exercise. He says: "the permanent disuse of any organ imperceptably weakens and deterioates it, and progressively diminishes its functional capacity."

Here too, the first part of Lamarck's statement is obvious enough, but he did not furnish evidence that the continuous disuse of an organ "progressively diminishes its functional capacity." However, I have furnished that evidence for protoplasm in its many forms.

The environment of an animal consists of those things which surround it and are outside of it. Effects produced by the environment are things done *to* the animal by *outside* forces. The effects produced by greater or less amounts of exercise (use and disuse) are things done *within* the protoplasm of the animal by *inside* forces. The two things are fundamentally different, and stand in contrast to each other. Of course, an animal may exercise its organs in one way in one envrionment, and in a different way in a different environment, but it is the exercise and not the environment which produces the result. To represent Lamarck's theory as being among the "environmental" theories is not only to misrepresent the matter but to mislead others.

After stating that the acquisitions and losses from use and misuse of an organ are "proportional to the length of time" of such use and disuse—don't overlook that "time" element—Lamarck goes on to say that all such acquisitions and losses "are preserved by reproduction" by those animals which have acquired modifications *in this way*.

Stoddard says that this theory has been "exploded." Where is the evidence for that statement? Who has examined the progeny of animals which have used some particular organs for a *long time* and compared them with the progeny of the same or other animals which have used the same organs for a *less time*, and found that the acquirements were not inherited?

I suggest that the reader write to any research institution, or to any university, or to any professor at any university, and ask what evidence shows that powers developed by exercise are not inherited. Do not be put off with generalized statements that scientific investigation shows that acquired characteristics are not inherited. Ask for the records of those investigations. And do not be put off by references to investigations directed to the effects of the environment. This is not a case of environment. Ask for the records of investiga-

tions into the inheritance of the effects in progeny of greater and less amounts of use and disuse by parents before reproducing.

If you are dilligent and urgent in your inquiries for evidence bearing on this matter you will find that there is absolutely no foundation for Stoddard's statement, and similar statements commonly made by others. And if you push your inquiries in several different directions you will find that I am the only person who ever did investigate this subject, and that no one has disputed the accuracy of the results found by me.

I have some correspondence of this character, and I am not adverse to receiving some more. As a sample, a person living in New York State asked some questions of this kind of a professor who has been prominent in making the kind of assertions Stoddard makes. He promptly replied that research "including vastly larger numbers" than I had studied, and "which are more accurate and are based upon experiment," showed the contrary. Asked where the results of these investigations and experiments could be found, the professor waited several weeks and then said that one experiment had been partly made.

Physical education means the development of physical powers by physical exercise. Biologically considered, mental education means the development of mental powers by mental exercise. Education may be divided into two parts—natural education and artificial education. Natural education extends from the cradle to the grave, and includes the results produced by normal actitivities in a normal life. Artificial education includes the schooling a person gets, and, when some professional career is followed, the results produced by continued mental efforts.

Stoddard states straight out that the effects of education are not inherited, but the illustrations he gives are not happily chosen. On page 60 he says that the children of English university professors (who are men having as much artificial education as any persons), are superior mentally to the children of English shopkeepers and artisans, who certainly have had less education than university dons. On page 62 he says of the heterogeneous American population, that those whose ancestors had lived for more than 200 years where the "little red school house" was ubiquitous, were tested as being mentally superior to the same stock coming at later dates from northern Europe where artificial education has been more than elsewhere but not so much as in New England. As coming next below these he cites the recent immigrants from southern and eastern Europe where general education has been much less than in northern Europe. And as coming at the bottom, he cites the negroes whose ancestors had no artificial education at all.

On page 95 he gives the Jukes family which started with three successive generations in which there was no artificial education, and very little natural education because the parents were exceptionally young for these three generations. He then contrasts the degenerate dscendants of the uneducated Jukes with the educated descendants of Jonathan Edwards who was a college graduate, who descended from a double line of college graduates, and whose wife was the daughter of the 51-year-old Rev. James Pierrepont with a great supply of both natural and artificial education.

Stoddard gives several other examples of the same character, which need not be reviewed here. Of course he omits all reference to the amount of education existing among the ancestors of the examples he cites. To say anything about that education would spoil them as examples. One would think, however, that if he wished to show that the effects of education are not inherited he would cite something which supported his contention. The reason he does not is because there is no such thing.

Stoddard holds that inferior stock must stay inferior to the end of time. There is no possibility of improving it by education or anything else. He says that this inferior stock is multiplying at a great rate, and that the only hope lies in a certain 13½ per cent of superior stock which is dying out because it is not reproducing itself. He is sure that the average intelligence of the world is going backward, and he wants to curb this by using segregation, sterilization and birth control on the inferior stock so that it will die out at the same time that the superior stock dies. He admits that the world is not yet ready for that kind of a thing, but he hopes that by the time the general public has lost whatever intelligence it now has, his ideas may be put into practice. He does not put it in exactly that way, but that is what his argument means.

Stoddard says that revolution is now in full swing, and that the revolution he is talking about is a revolt against civilization. He says that the Great War was the most apalling catastrophe that ever befell mankind, but he seems to think that the subsequent general unrest contains in it more serious consequences than the war itself. He speaks of the tragedy of social upheavals and dwells particularly on Bolshevik Russia, but says that the unrest and revolt extends around the world. He says that this revolt is due to inferiors recognizing their inferiority, and what causes him particular anguish is the great ability shown by many of these inferiors. He is quite sure that it is the stress caused by the activity of these inferiors which spells ruin to civilization. He would have these inferiors remain quiet, and do only what the superiors told them to do. For how can those superiors have peace and comfort if the inferiors persist in making a disturbance?

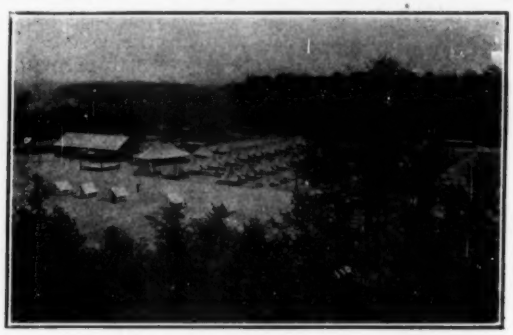
There is a little paleontological history which goes back some millions of years. That history shows that periods of stress, which correspond to our present unrest activity, were the periods of greatest evolutionary advance, and that calms of the kind Stoddard wishes for were periods in which there was no progress. In more modern times, war-like tribes were the ones which advanced most rapidly in civilization. The loss in killed of the superior individuals was more than compensated for by something else, provided the loss was not great enough to cause the population to become extinct. It was so in Greece and Rome, both of which advanced through incessant warfare, and both of which declined when they became peaceful, and practiced birth control.

This is not a plea for war, or for the killing of the world's intelligentia. It is pointing to the fact that activity of the kind which Stoddard deprecates causes more progress in civilization than there is loss by the killing of a few superiors. Civilization will lose nothing by killing off those superiors who will leave no progeny behind them, and Stoddard seems to think that sterile persons are about the only thing that is superior. Civilization is kept alive by those persons who keep the race alive, and Stoddard acknowledges that it is the people now in revolt who are producing the next generation. That revolt is a revolt *of* civilization and not a revolt *against* civilization. It furnishes that mental and physical activity which lies at the foundation of all progress in civilization. As it goes down to the lowest strata of society, and spreads over the entire world, it presages greater progress in civilization than the world has yet seen.

Monadnock Block.

"CAMP ROOSEVELT—BOY BUILDER"

Physical training has come to be recognized as a necessary part of our educational system. It is no longer necessary to argue the question that the body needs developing, training and educating quite as much as the mind, and that no mind, however well trained, can work at the highest degree of efficiency unless it functions through a body that is equally well trained.



Camp Roosevelt, Indiana

The trained mind and perfect body are of little avail if there be not sound character as the fundamental actuating principle. The cry of the world always is—now as it has been in the past—for men of character, reliable leaders in the battle of life.

Chicago has taken the lead in providing an avenue for this triple education—the development of body, mind and character. It has developed a plan whereby boys, instead of roaming about the city streets with its poolrooms and easy pitfalls, can spend a happy vacation out in the open, camping out, and can receive, in addition to a good time, a valuable training in self-government and self-development.

This is brought about through a great Olympian playground which is fast becoming nationally known as "the boy builder"—Camp Roosevelt. The camp is located on Silver Lake, Indiana, eight miles east of LaPorte, and sixty-five miles from Chicago on the New York Central Lines. The many buildings on the grounds

Every boy in camp is given a thorough physical examination.

were once occupied by a boarding school for boys, and so are admirably equipped for the comfort and convenience of the campers. The property was laid out by skilled landscape gardeners, who did much to intensify the natural beauty of the spot.

In addition to the support of the public school system, the War Department is aiding this splendid project by lending complete camping equipment and by assigning army officers to the camp for military instruction. The American Red Cross lends its support by maintaining a completely equipped hospital and a staff of doctors and nurses to look after the health and sanitation of the camp. The Y. M. C. A. keeps from seven to ten secretaries on duty throughout the entire summer. These secretaries, in addition to looking after the welfare, comfort and morale of the boys, assist in athletics and furnish the entertainment for the campers.

It will readily be seen that the process of man-building must be diverse to include the varying characteristics, weaknesses and differing temperaments of hundreds of growing boys. To meet this need, the camp has been divided into three divisions; the summer schools, which include seventh and eighth grade and all high school subjects; the R. O. T. C. for boys preferring the military phase of camp life; and the Junior Camp, for younger lads. In the schools division, the instruction is of the highest type. The faculty is selected with care from the Chicago public high schools. Ample classrooms, laboratories, workshops, are thoroughly equipped with every modern facility. Here boys may learn trades, under most expert guidance, and return to their schools in the fall with a well defined idea of their future lifework. Each of the shops occupies a small building of

A life-saving class

concrete, with windows on all sides, admitting plenty of light and fresh air.

In addition to its educational advantages, the health features are of importance. Every boy in camp is required to pass to test given by the American Red Cross in first aid, and is taught hygienic means of safeguarding health. The work of the Chicago Dental Society representative is also productive of much good, in the matter of instruction in the systematic and intelligent use of the toothbrush. Boys are also taught the value of thorough mastication of coarse and wholesome food as a splendid prophylactic measure.

Major F. L. Beals, U. S. A., the founder and directing head of the camp, has made boys his life study, and the well regulated program carried out at the camp embodies the results of his findings of many years' research. He is well qualified to mold the lives of the boys entrusted to his care, being a born leader, and believing firmly in those wholesome doctrines manifested by that great man after whom the camp is named. It is his pleasure to advise and assist parents, where desired, in solving the numerous "boy problems" which confront them. Letters addressed to his office at the Board of Education, 460 South State Street, Chicago, receive immediate response.

The camp will open this summer on July 2, for boys in the summer school, and on July 9 for boys who elect the military or Junior Campers' division. It will close on August 18.

PSEUDO-ASTHMA, AND PSEUDO-HAY FEVER*

H. D. RINEHART, M.D.
Pasadena, Cal.

So many persons who have a nasal, or bronchial disorder, and believe they have hay fever, (for which many of these have been told no cure can obtain)—but in fact, have pseudo-hay fever, or pseudo-asthma, is my reason for this article.

The same condition on different individuals does not necessarily produce the same symptoms. Because we classify symptoms always as meaning the same, we frequently fail in our efforts to cure.

I have for some years, classified my asthmatics, and my hay fever patients, (taking patients' diagnosis), into two classes. The patient giving a history of either or both of above disorders, when my examination reveals no sign of pathology within the nasal chambers, nor the mouth or throat, belongs to a class of special or individual neurosis. If the examination reveals submerged, diseased tonsils, adenoid tonsil, or infected teeth, I raise a question in my mind, whether the neurosis is not caused by infection. If infection is the cause, then the removal of the infection sources will cure the patient. After my examination of mouth and pharynx I carefully and thoroughly hunt for the cause of the patient's trouble within the nasal spaces. When one is very familiar with the appearances of a normal healthy nasal field, he can readily arrive at some decision, when the nasal structures are shrunken with a weak solution of cocain and adrenalin spray.

The cause of pseudo-hay-fever usually is found within the nasal field. Impigning spurs, highly deformed septums, hypertrophoid inferior turbinates, crowding for the whole space, or more frequently the middle turbinate show signs to me of trouble hidden by its hypertrophoid condition. I then thoroughly adrenalize the attic spaces of the nose, if needful for closer observation, and very frequently can I see evidences of chronic infected ethmoid cells, sphenoid sinus, with polypii filling spaces which normally contain only air and slight moisture.

When I have these evidences I hesitate no longer, to promise my patient a cure of all the disorder and symptoms, providing he submits to operation.

I say operation because the time spent with sprays and local applications to these conditions is a total loss; and the money spent by patients for treatments with local applications is unsatisfactory in the end results.

Whatever the irritating cause of pseudo-asthma or pseudo-hay-fever, I remove the pathological cause.

I have little faith in the rheumatic diathesis. I have come to believe that when there are no tonsils, and no adenoid tonsil, and no diseased teeth, and when there are well formed and healthy nasal structres within each nostril, there will obtain rarely symptoms we call rheumatism. Further, when the above conditions exist, those persons are practically immune from deafness, from mastoid inflammation and ear disorders.

I try to forget that such a condition as rheumatic or gouty diathesis ever exists, therefore, "hang no disease on its hooks," but continue to search for focii of infections, and when found, if possible, remove focii, after which nature will effect the cure.

The most frequent cause I have found for pseudo-asthma, or pseudo-hay fever has been ethmoidal or sphenoidal infection, one or both. Most frequently a mucocele infection, though not infrequently a purulent stream escapes when some cell is opened widely. Many times the attic space is well filled with a mass of polypii, and on extenteration of the infected ethmoid, or spenoid cells, the cells are found tightly filled with the growth of polypii. I have frequently found within sinuses, or ethmoid cells, when little pathological signs external, a solid mass, looking like a large navy bean, or lima bean. When opening the cell with a punch forceps, these would worm themselves out, like a live worm; because of the compressed condition of the polypus it would expand when cage opened.

It no longer seems mysterious when a patient gives a history of most unbearable pressure headaches so frequently as to almost constantly put the patient out of working condition. These headaches are different from those caused by eye strain, and the correction with glasses of all the error in refraction will not control the pain from polypii pressure within the cells. There's only one way to relief—to exenterate the cell infected. Not every person having ethmoidal, or spenoidal infection, with or without polypii, has headaches: and why not, is beyond my knowledge, but most of them have pseudo-asthma or pseudo-hay fever, or what patients call, a constant "cold" in head; or obstructed nasal respiration.

The saying, "that we find what we are looking for," has much truth. If one is not looking for the ethmoidal infection, he will hardly find it. Often the hypertrophied middle turbinate, so hides the attic-space that it cannot be inspected: however, the surgeon who has been persuaded that the yet hidden cause of patients' false asthma or false hay fever can be located, will search the whole field carefully, to prove to himself, that it has been located, or not. If it is discovered that signs point to such pathology. I do not hesitate to operate for exenteration of sinus or cells in the ethmoid region, though I am more than theoretically cognizant of the danger that an accident to the ethmoid plate would result. These patients, after operation, should be under inspection for months after they are dismissed. Many times I find, days and weeks after my operation, some small polypii wormed out of some cell not fully operated at time of operation; as well some new formation of polypii from infected field under treatment.

These must be removed; and drainage kept good if we would effect a cure, and the cure is most sure to result, though some months may intervene. I advise my patients to report every one or two months for a year.

A twin brother of fifteen, always sickly and asthmatic, was despondent because he could not engage in sports like his brother. I operated both side of ethmoid, and spenoid sinus, with a result that he now is perfectly well and as strong as his brother.

Mr. H. aged 55, by profession an educator, has had asthma since the age of 15. He could not engage in physical exertion or labor, because of spasms of asthma following. Many specialists told him he was an asthmatic, and could only expect temporary relief with drugs. He had been examined recently by a specialist, who told him he had a perfectly formed and healthy nose, so that there was no cause therein for this asthma.

After my examination, I told him he had pseudo-asthma, and by operations within his nose, he should expect to be cured. I operated the worst ethmoidal region since I began to operate one side at a sitting. The patient has had no more asthma from that day, now nearly six months. Operated the other side one week later.

Mr. M. age 40, a carpenter, came to this climate for relief of asthma, but recovered now. After examination

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* Read before the Eye and Ear Section of Los Angeles Co. Med. Assoc. Feb. 5th, 1923.

SOME CURIOUS WORKINGS OF THE HUMAN MIND.

EDWARD PODOLSKY.
Brooklyn.

The mind and its mysteries have, from time, immemorial, been the subject of a great deal of thought and study. For what profounder mystery than the human mind exists? What more mysterious influence is more fascinating and far-reaching?

The power of the mind over the body is strange and wonderful. The case is related of a French soldier who received a slight contusion from a musket ball on the shoulder. There was a momentary pain at the site of the injury; at the same instant he distinctly felt a stream of blood flowing down from the side of the chest from the wound. Yet the skin had not even been broken. The antesthetist at the Charing Cross Hospital, England, reports the following curious incident: "During the year 1862 I was called upon to give chloroform to a very nervous and highly hysterical girl, who was about to have two sebaceous tumors of the scalp removed. On going into the operating theatre it was found that the bottle containing the chloroform had been removed to the dispensary, and on taking the Snow's inhaler . . . I found it quite devoid of even any smell of chloroform. Then having sent for the bottle, in order to accustom the girl to the face-piece, I applied it to her face and she at once began to breathe rapidly through it. When she had done this for about half a minute she said, 'Oh, I feel it, I feel I am going off,' and as the chloroform bottle had not yet arrived, she was told to go on breathing quietly. Somewhat to curtail the account—the patient rapidly showed all signs of complete anaesthesia. Wishing to see the effect of her imagination, I said to the operator who was going to remove the second tumor, 'Wait a minute, she seems to be coming around.' Instantly her respiration, which had become quite quiet altered in character, becoming rapid . . . she commenced to move her arms about. I then reapplied the face-piece and her breathing became quiet again, and she submitted to the second operation without moving a muscle." This is indeed one of the most remarkable cases of the mind's influence over bodily conditions.

A more remarkable case occurred in Newlyn, England, and the results were tragic. Several years ago the cholera was prevalent at Newlyn, and intercourse was forbidden between the people of the village and other places in the neighborhood. One day a man entered the shop of a barber in Penance, and was shaved. On leaving, some one who had recognized him asked the barber if he knew whom he had been shaving. He replied that he did not. "Why, he is a man from Newlyn." That was enough. The terrified barber was seized with cholera, and died within 24 hours.

A still stranger case of the dreadful influence of a terrified mind is the following. A sailor, aged thirty, was so alarmed by a storm that he fell speechless on the deck. Not only was he deprived of his speech, but upon examination, large drops of perspiration of a bright red color was found on his face. At first it was thought that blood had come from his nose, but on wiping off the red drops from his face, the ship physician was astonished to see fresh ones start up in their place. On wiping and careful examining the skin it was distinctly observed that the red fluid exuded from the skin, and that it was in fact bloody sweat which had come as a result of the extreme fear that the sailor had experienced.

The mind may sometimes play the strangest of tricks. It may slip into so strange a state as to cause a most novel relation of the external world as perceived through the sense of sight. The case is related of an R. A. F. signaller who was blown up by an aeroplane while taking refuge is a disused trench in France. In becoming conscious in the trench, he found that everything appeared at right angles to the position he expected. When he had returned to England he found that when walking along a street which bent roughly in form of a semicircle, thus , he had the irresistable feeling that he had been walking like this . He would think that the whole room he was in, had twisted around through a right angle. Should he happen to ride on top of a bus, and the bus turned at right angles, he felt as if he was continuing in a straight line, although he knew that a corner had been turned. Cases like this are not as rare as would seem, for the alienist would have us believe that the cubistic and futuristic paintings of the so-called ultra-modern school are nothing more than the irradiations of such minds as the one above, where all sense of perspective has been distorted by a diseased mind.

The strange departures of the mind during states of heightened emotion and extreme excitement are very interesting and mystifying. This is particularly true when a group of minds experience the same phenomenon. The incident that occurred to John McCormack while performing in the Theatro Chiabrera, in Italy, is an interesting example of this. "The night at length came for the opening performance. A crowded audience was assured and when the curtain rose we saw that it was on hand. I sang with sufficient assurance and everything seemed to be going well until I approached a point in the opera in which I knew that my audience would want from a certain top note plenty of noise. I hadn't figured it out before the performance, but as the place drew nearer I decided suddenly, as we say nowadays, to 'camouflage' that particular tone. It was the big aria for a tenor who has a top B-flat. I hadn't a good B-flat then, and when the moment came to let it go I walked to the footlights, opened my mouth and in look and gesture did my best to give an imitation of a tenor ripping out a ringing high note—though I purposely gave forth no sound." What was the great surprise of McCormack when he was greeted with a tremendous applause for this silent "note." Although the tenor gave forth no sound, the minds of a thousand people, strongly moved by an intense expectation of hearing a top B-flat, actually heard, it seems, a display of wonderful vocal technic, when not even the slightest sound was uttered.

A still more dramatic incident occurred in 1866-7 when a conflagration destroyed the Crystal Palace in England. When the animals that were kept in the palace were destroyed by fire, it was supposed that the chimpanzee had succeeded in escaping his cage. Attracted to the roof, with this expectation in full force, men saw the unhappy animal holding on to it, and writhing in agony astride one of the iron ribs. The struggle was watched by people below with a great deal of concern and breathless suspense. But the fact was that there was no animal there whatever, and all this feeling was thrown away upon a tattered piece of blind, so torn, that to the frenzied minds it resembled the body, arms, and legs of an ape.

During battle the mind is put under a great strain, and as relief it has often resorted to the strangest antics. During the Great War, when the British army was retreating from Mons, there appeared at the most critical

moment, what seemed, to the minds of British soldiers, angelic assistance. The tide of battle seemed to be stemmed by supernatural means. In a letter written by a soldier who actually witnessed these startling events, is quoted in the *North American Review*, August, 1915, as follows:

"The men joked at the shells and found many funny names for them, and had bets about them, and greeted them with music-hall songs, as they screamed in this terrific cannonade . . . The climax seemed to have been reached, but 'a seven-times heated hell' of the enemy's onslaught fell upon them, rending brother from brother. At that very moment, they saw from their trenches a tremendous host moving against their lines. Five hundred of the thousand who had been detailed to fight the rear-guard action) remained, as far as they could see the German infantry was pressing against them, column by column, a grey world of men—10,000 of them, as it appeared afterwards. There was no hope at all. Some of them shook hands. One man improvised a new version of the battle song Tipperary, ending 'and we shan't get there' And all went on firing steadily . . . The enemy dropped line after line, while the few machine guns did their best. Everyone knew it was of no use. The dead grey bodies lay in companies and battalions, but others came on and on, swarming and advancing from beyond and beyond.

" 'World without end, Amen,' said one of the British soldiers ,with some irreverence, as he took aim and fired. Then he remembered a vegetarian restaurant in London, where he had once or twice eaten queer dishes of cutlets made of Lentils and nuts that pretended to be steaks. On all the plates in this restaurant a figure of St. George was printed in blue with the motto, *Adsit Anglis Santus Georgius* (May St. George be present to help England!) The soldier happened to know 'Latin and other useless things,' so as he fired at the grey advancing mass, 300 yards away, he muttered the pious vegetarion motto. He went on firing to the end, till at last Bill on his right had to clout him cheerfully on the head to make him stop, pointing out as he did so that the King's ammunition cost money and was not lightly to be wasted. . . . For, as the Latin scholar uttered his invocation, he felt something between a shudder an an electric shock pass through his body. The rear of the battle died down in his ears to a gentle murmer, and instead of it, he says, he heard a great voice louder than a thunder peal, crying, 'Array! Array!' His heart grew hot as a burning coal, then it grew cold as ice within him, for it seemed to him a tumult of voices answered to the summons. He heard or seemed to hear thousands shouting:

" 'St. George! St. George!'

" 'Ha! Messire, Ha! Sweet Saint, grant us good deliverance!'

" 'St. George for Merrie England!'

"As the soldier heard these voices, he saw before him, beyond the trench, a long line of shapes with a shining about them. They were like men who drew the bow, and with another shout their cloud of arrows flew singing through the air toward the German host. The other men in the trenches were firing all the while. They had no hope, but they aimed just as if they had been shooting at Bisley.

"Suddenly one of these lifted up his voice in plain English: 'Gawd help us," he bellowed to the man next to him, 'but we're bloomin' marvels! Look at those grey gentlemen! Look! Look at them! They're not going down in dozens or hundreds, it's *thousands* it is! Look, look! there's a regiment gone while I'm speaking to ye!'

" 'Shut it,' the other soldier bellowed, taking aim. 'What are ye talkin' about?' But he gulped with astonishment even as he spoke, for indeed the grey men were falling by the thousands. The English could hear the gutteral scream of their revolvers as they shot, and line after line crashed to the earth. All the while the Latin-bred soldier heard the cry 'Harrow, Harrow! Monseingneur! Dear Saint! Quick to our aid! St. George help us!'

"The singing arrows darkened the air, the hordes melted before them. 'More machine guns,' Bill yelled to Tom. 'Don't hear them,' Tom yelled back, 'but thank God, anyway, that they have got it in the neck!'

"In fact, there were 10,000 dead German soldiers left before that salient of the English army . . . In Germany the General Staff decided that the English must have employed turpentine shells, as no wounds were discernible on the bodies of the dead soldiers. But the man who knew what nuts tasted like when they called themselves steak, knew also that St. George had brought his Agincourt Bowmen to help the English."

The resorting of this soldier's mind to so strange a state under the intense emotions in battle is not an isolated instance. In fact, history abounds in cases of this nature. On several occasions, the Crusaders thought that they saw angelic hosts fighting for them. In the wars between the English and the Scotch several such cases are recorded, and on several occasions in the Napoleanic wars, soldiers saw phantom horsemen charging the enemy.

The mind is thus seen to be capable of the most unusual departures. It is indeed the most astounding sorcerer, the most profound of all mystifiers.

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son proposed section of the duodenum and its reunion in front of the mesenteric vessels—a measure not favored by surgeons, most of whom assert their fear of trying it, and declared by Finney, of Baltimore, to be "a thoroughly unpractical procedure".

Atonic dilatation of the stomach is due to a weakened condition of the muscularis, resulting in a deficiency in peristalsis, so that the stomach contents are not pressed forward toward the pylorus to be emptied in normal time. In some instances, after a prolonged attack of typhoid fever when, in common with other tissues and organs of the body, the stomach is considerably weakened, overfeeding may readily, as it not infrequently does, lead to distension and dilatation.

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I informed him he had pseudo-asthma, and that by operations on each side of the nasal chamber, he could be cured. I always operate on what seems to me the worst side at the first seance. The patient returned the day after the operation with a smile saying that he had no asthma, the first time he could so report for many years. A week later I operated the other side, and recovery was uneventful. After six weeks, he believed himself perfectly well, and did not return for several months. Then he said, for three weeks he had been wheezing. On examination I found one attic well filled with polypii again. I cocainized the field, cleaned up all debris, and found another ethmoid cell filled, by infection, with pus and polypii. I carried out exenteration of cell, removing all diseased tissue that obstructed the drainage, and he returned next day with a report of no wheezing.

PRECAUTIONS TO BE TAKEN AFTER THE TONSIL OPERATION

HAROLD HAYS, M.D., F.A.C.S.
New York

The tonsil operation should never be considered a minor operation. It should always be done in a hospital and the patient be allowed all the time that is necessary for rest after the operation. In a recent review of a number of cases of tonsil operations in children, a statement was made, that children who were operated upon in the clinic or were allowed to get out of bed the first day, often lost a great deal of weight which they did not regain for months. On the contrary, where children were allowed to stay in bed for four or five days after the operation, they regained the amount of weight they had lost within a very short time, and the reaction from the operation was practically nil. Such an important fact should not be overlooked. Quite frequently parents are desirous of getting their children out of bed within a short time, with the result that the children lack vitality and it is often a great many weeks before they regain their physical stamina.

Immediately after operation, the patient still being under the anesthetic, ice cloths should be applied to the neck and these should be kept on continuously for the first twenty-four hours if they do not inconvenience the patient. The ice cloth reduces the inflammatory reaction in the throat and controls hemorrhage. However, if the cloths are particularly irritating (and this is often so in young children) they must be abandoned because the child will struggle and kick around the bed, and this excitement will offset any good that may arise from the use of the cloths. Children, particularly, should be made to swallow fluid as rapidly as possible after the operation. The throat is so extremely sore that sometimes the child will go for four days to a week without allowing anything to pass the pharynx. However, they must be encouraged to swallow at the earliest opportunity, first being given orange juice in which the white of egg has been whipped up or some milk which is slightly cooled. In order to eliminate the pain on swallowing, the attendant should grasp the head of the child with the palms of the hands over the ears and hold the head up so that the muscles of the neck are on a stretch. It will be found that the child can swallow in almost every case, without any difficulty if this procedure is resorted to. Whether an actual act of swallowing takes place, or whether the child simply uses the oesophagus as a funnel, it is impossible to say; nevertheless it is surprising to find how easy it is for patients to perform the act of deglutition if they follow this procedure.

Frequently, although there is no bleeding at the time of operation, oozing from veins or arteries which have been exposed, will take place after the operation is over. Sometimes this will occur the first night, but the author can cite an instance in which the acute hemorrhage occurred on the sixth day. This hemorrhage must be controlled at once. It is wise to watch the pulse. If the pulse rate is below 100, one need not be alarmed, but if the rate jumps up to 110 to 150, something must be done immediately to control the bleeding. If the child is at all tractable the mouth should be opened and pledgets of cotton, on which a small amount of adrenalin or thrombo-plastin is placed, may be inserted into the bleeding cavity. One cannot insist too strongly on the necessity of good illumination while making an examination of the throat at this time, because a spurting vessel, deep down in the space between the pillars, must be seen, grasped and tied off, if the bleeding cannot be stopped by the ordinary pressure. The author is happy to say that in no instances has he had to resort to very radical procedures to stop post-operative hemorrhage, because in almost every one of his cases, the oozing has been venous. If the child, however, is in a very precarious condition one may have to resort to intravenus infusion of salt solution or the actual transfusion of blood.

2178 Broadway.

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ace to kidney integrity may lead to hydronephrosis, pyonephrosis, etc. A stone in the cortex of the kidney does not furnish as urgent an indication for operation as one in the renal pelvis.

(g) Obstructive calculous anuria. This condition calls for immediate relief.

(h) of bilateral nephrolithiasis. In bilateral cases, first operate on the least involved kidney provided there is no acute pathological process in the other kidney, requiring immediate attention. In from two to three weeks, operate on the other kidney. If one of the kidneys be the seat of acute complications, it should be the first to receive surgical relief.

(i) of stone in one kidney and disease in the other.

(j) of renal lithiasis co-existing with tubercular or neoplastic disease of the same kidney.

(k) of a calculus or calculi in a patient's only kidney; here, the patient's existence depends on the unhampered function of his remaining or sole kidney.

Nephrolithiasis and its complications are subjected for cure to the following operations, each which has its respective indications, limitations and increasing field of usefulness—pelviolithotomy, nephrolithotomy, nephrectomy, nephrostomy, incision and evacuation of perinephric phlegmons. It may be necessary to supplement any of the fore-mentioned operations with temporary drainage of the renal pelvis, renal parenchyma, or perienal regions. Always ascertain, before operating for renal stones the functional efficiency of the opposite kidney; as, the necessity for a nephrectomy may arise unexpectedly during the course of any kidney operation.

Pelviotomy or pelvic-lithotomy, the operation of election, the operation most generally used for nephrolithiasis, is well adapted to the removal of stones present in the renal pelvis. With it, dangerous hemorrhage, immediate, consecutive or secondary is of rare occurrence. Pyelotomy does not injure the renal parenchyma. It is unsuited for removal of voluminous or branched calculi. The pelvis is to be incised on its posterior vascular aspect.

Nephrotomy or nephrolithotomy, is attended with destruction of kidney tissue, and followed at times by secondary hemorrhage. The friability of the kidney tissue may be such that the stitches tear out. Nephrotomy permits a thorough exploration of the organ and a complete removal of the calculi. It possesses the signal advantage of not entailing the sacrifice of the kidney. It is employed also when calculus or calculi lie just beneath the renal surface, when the renal pelvis is abnormally small or if the kidney is so bound by adhesions that its exteriorization is inadvisable. If pyelotomy be out of the question, nephrotomy is the operation of election for nephrolithiasis. Usually all the calculi can

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Intravenous Fluorescence in Diagnosis and Therapy

In the issue of the *Journal of the American Medical Association* of February 10 a method of roentgenography of the urinary tract, whereby lesions are better depicted through the intravenous injection and excretion of sodium iodid, is described by Osborne, Sutherland, Scholl and Rowntree, of Rochester, Minnesota.

This method suggests another. Might not the intravenous injection of substances possessing the property of fluorescence improve fluoroscopy and certain types of roentgenograms by making the soft tissues more penetrable by the rays—measurably eliminating them as barriers, so that bone damage and foreign bodies and silhouetted intestines might appear more clearly on the negatives. Therapy might also be enhanced with smaller dosage of the rays, particularly in cancer. These possibilities lend themselves easily to animal experimentation.

The possibility of reinforcing the natural fluorescence of the crystalline lens by this means also suggests research in respect of night blindness, cataract, and other forms of defective vision dependent upon this element. This field, of course, is apart from the roentgenographic.

Fluorescent or photodynamic substances which suggest themselves in this connection are fluorescin, which is non-toxic in doses of one-quarter grain, quinin bisulphate, and esculin. The last-named substance is non-toxic and the dosage may be stated to be fifteen grains.

Esculin is a glucoside derived from Æsculus hippocastanum (horse-chestnut). It is very soluble in alkaline solutions. It has the property, like other fluorescent substances, of absorbing ultraviolet rays which are then gradually given off. Freund found it useful as a prophylactic against snow blindness (*Zeit. f. Neuere Physikal. Med.*, 1908, ii), and Graham injects a three per cent solution beneath the skin when using the Finsen light in the treatment of lupus (London *Lancet*, 1905, ii, p. 1769).

It may be that in luciferin, the active principle of phosphorescent cold light derived from familiar animal organisms, may be found the desired properties. We are not personally familiar with this substance, which has been highly developed in the laboratories of Princeton University. Its non-toxicity and general availability for the purposes predicated in this editorial could probably be readily passed upon.

Biology of the Chorus Girl

Writing of race betterment, Knight Dunlap, professor of experimental psychology in the Johns Hopkins University, points out that the selection of chorus girls and dancers as wives by so many of the scions of our best families on both sides of the great pond is profoundly significant from a biological standpoint, representing as it does the right sort of sexual selection. "Individually," Dunlap says, "many of these women may be of undeveloped mentality and coarse fiber, but these are largely accidents of education and environment. Nevertheless, these same women may be racially of very high grade, that is, they may represent stock capable of high moral and mental education, as well as of excellent physique. The racial qualities transmissible to progeny, it must be remembered, are independent of training. It must also be borne in mind that we are speaking only of the type of entertainers which is really well selected, that is, which has the high as well as the lower qualifications."

Dunlap remarks that the majority of these actresses are selected on the basis of sexual attractiveness exclusively or in large part, both by managers and the aforesaid scions. The most successful actresses of this type, he says, are with few exceptions those who most copiously display their personal charms—not merely of physique, but of all the qualities, including the subtler mental and emotional qualities, which affect and attract the better type of male.

It is further stressed that the proportion of the female population which possesses distinctive beauty is never large in any community. The girls of the stage represent the relatively small number of physically fit women in the racial stream. The percentage of women who would be even moderately presentable as barelegged dancers Dunlap declares to be so low as to be shocking.

It seems to us that there is much in Dunlap's novel point of view, which, by the way, can hardly be expected to become popular among the women not behind the footlights. There is no need of interviewing any of them on the point in question.

The Hot Operating Theatre

We were delighted to read recently an original article in the London *Lancet* by R. P. Rowlands, surgeon to Guy's Hospital, protesting vigorously against the traditional custom of over-heating operating theatres.

Rowlands sanely declares for a temperature of 65 deg. Fahr., with good ventilation and no excess of moisture, after clearly and irrefutably setting forth the evil effects of excessive heat on the patient and on the surgeon and his assistants.

This is a matter that has long excited our wonderment. We hope that the English surgeon's wise views will sink into some thick skulls hereabouts.

Ambitious Bureaucrats

The public hearing at Albany on the question of whether or not a monopolistic State insurance fund is wanted developed some interesting viewpoints and revealed some personages familiar to us because of their curious activities with respect to certain medical mat-

ters. For example, we noted the presence of Andrews, of the extraordinary organization known as the American Association for Labor Legislation, long notorious for its attempts to put over health insurance. The fact that Andrews was present as an advocate of Untermyer's bill compelling every employer to insure with the State rather than with other compensation insurance carriers would alone lead us to oppose its passage.

We are decidedly not in favor of the State' engagement in any business. Let it once go into one business and it will go into others. The result of that sort of thing ought to be patent to anyone who desires private business to keep on doing what it can do better than the State.

This proposal of a monopoly is about as bold in principle as would be the urging of the State Department of Health to take over the care of all the sick.

Insulin

We understand that the patent rights covering insulin, the new remedy for diabetes introduced by Banting, are held by the University of Toronto. Whatever the reasons for this form of holding may be, in so far as personal gain is concerned Banting cannot escape pursuit on the part of wealthy diabetics who, it is to be presumed, will now flock to Toronto. Will he turn over the fees so received to the University of Toronto?

We wish Doctor Banting success in every sense of the word.

Dr. Banting is only in his thirties. What an achievement for one standing at what is practically the outset of his career!

This is better than the science which concerns itself with bombs and poison gas.

Miscellany

CONDUCTED BY ARTHUR C. JACOBSON, M. D.

Who's Looney Now?

One of our most noted dry leaders declares that anyone opposed to prohibition ought to have his sanity tested. Such an individual, he says, does not believe that because murder and arson and theft flourish despite the laws against them it is therefore proven that those laws ought to be flouted or repealed. If, then, he does believe that the prohibition law ought to be repealed because alcoholism flourishes, our critic thinks that he is revealing a cracked mentality.

The fallacy here, it seems to us, is the subtle implication that alcoholism evinces a moral turpitude comparable to that characterizing murder, arson and theft. We should say that the critic's reasoning is specious, but unsound when analyzed.

If a man indulges unduly in Turkish baths, or tea and coffee, or athletics, or prayer, or grief, or tobacco, or beer, he may be foolish, but he is not immoral. If the prohibitionist does not believe in legislating against these things is he, too, cracked? If he does not believe that war is legalized murder on a large scale is his sanity questionable? If he does not believe that the destruction of enemy property with fire bombs is legalized arson is he crazy? If he does not believe that the seizing and permanent holding of enemy property is legalized theft is he nutty?

Without intending to be facetious, we should like to interpolate here that in our opinion a man who would over-indulge in near beer would be much more foolish than one who would drink real beer to excess—and more nearly immoral.

In any case, prohibition is now a political and not a moral issue.

(Concluded from page 100)

be removed through a large incision; in special cases, several small incisions may be made. If infection exists, pass a drain through the cut cortex to the renal pelvis, also pass a drain to the kidney.

Nephrectomy is indicated:

(a) In multiple, parenchymatous, large coral-shaped calculi unsuited to pyelotomy or nephrotomy.

(b) In renal hemorrhage that cannot be checked.

(c) In cases presenting advanced necrotic, suppurative or destructive renal changes.

(d) When the kidney is reduced to a mere shell.

(e) When the kidney has been transformed into a sclero-lipomatous mass.

(f) If it seems probable that nephrolithotomy will leave a permanent urinary fistula.

(g) In chronic fistulae of the kidney, pelvis or ureter which have not yielded to non-operative treatment.

(h) In malignant disease such as tuberculosis, cancer, etc., in a stone-bearing kidney.

If there be doubt as to the functional integrity of the other kidney, nephrectomy is not to be performed. Nephrectomy has had to be performed during the actual existence of pregnancy in many cases with satisfactory results as regards the mother, the continuance of pregnancy and the health of the child.

Nephrolithiasis in pregnant women calls for the same operative procedure as in the non-pregnant. In the pregnant these operative procedures have the same indications, limitations, palliative and curative efficacy as in the non-pregnant. During pregnancy, the lumbar route of approach to the kidney is the only one that can be considered. Pregnancy apparently does not unfavorably influence the prognesis of operations for the relief of nephrolithiasis.

Operations for the relief and cure of nephrolithiasis and its various complications do not, any more than other major abdominal operation such as appendectomy, cholecystectomy, etc., unfavorably influence the course of pregnancy. They do not jeopardize the foetal or maternal life.

In the pregnant, after operation performed for nephrolithiasis and any of its various complications, gestation usually follows its evolution undisturbed and is but slightly more hazardous to mother and child than pregnancy under normal conditions, provided the remaining kidney is functioning normally. Parturition and lactation are uninfluenced. The nephrectomized woman may be permitted to marry, or if married to undertake the risk of pregnancy, provided she is in otherwise fit condition. As a rule, there is no reason to interrupt pregnancy occuring in women with only a single kidney. If the remaining kidney is healthy, the strain of pregnancy can be fairly well borne. The development and persistence of serious symptoms may, if operative treatment be absolutely contra-indicated, call for the induction either of abortion or of premature labor.

59 East Madison St.

Another A. M. A. Special Train

The train for the special 25 day tour from New York City to the meeting of the American Medical Association in San Francisco, gotten up under the aunspices of the Medical Society of the State of New York, is already filled.

Another train will be arranged for if 125 more subscribers can be assured. In order to do this, however, it will be necessary for applications to be in not later than the 15th of April.

All applications should be sent direct to Mr. J. S. McAndrew, Tour Manager, Lifsey Tours, Inc., 1472 Broadway, New York, N. Y.

(Concluded from page 84)

However, overwork even in unsanitary and badly ventilated courtrooms alone cannot be the cause of this unusual proportion of suicides among judges, and not being able to ascribe any definite reasons why so many of these learned judges should have ended their useful careers so abruptly, I must appeal to you to find the causes and the remedy. The warning already expressed against too much brain work without recreation, remaining too long unmarried, the advisability to subject themselves to an annual physical examination by a competent physician so that insidious disease may be detected, treated, and cured, are of course things which are as applicable to the legal profession as to the medical or any other. The legally trained man is less exposed to the danger of drug addiction than the physician; the unscrupulous stockbrokers, knowing that they cannot fool the lawyers as easily as the physicians, do not tempt nor torment them with get-rich-quick schemes. I therefore come to-night before this society, representing both the medical and the legal professions, to ask for help and advise how we may minimize these tragedies. Let us hope that our deliberations to-night, our example and every day conduct may not only help the despondent members of our own professions, but also men and women in other walks of life and save them from a premature death by self-destruction.

Discussion

Dr. George D. Stewart: I have been much interested and pleased with the altruistic address of Dr. Knopf. The topic is both pathetic and grim; the treatment suggested is rational, tender and humane. I confess, like him, to a great deal of surprise over the figures concerning the suicide rate among doctors, particularly the increasing rate; yet, there seems to me some explanation, however sad, for both.

The comparative figures probably do not give us a very fair picture. We are told that 57 judges committed suicide. There are in this country 140,000 physicians, but we are not told how many judges there are. Would it not be fairer to include all men of the legal profession rather than to select the judges? These have, by virtue of better health, better balance, or greater opportunity, arrived; and, after attaining to the dignity and the emoluments of a judgeship, after having successfully weathered the trip to that port, why should any of them commit suicide? Similarly, we have not been told how many bank presidents there are. It is astonishing in this materialistic age when all success is measured by the dollar, that any bank president should ever attempt suicide. Here, again, I do not think the comparison a fair one; why not compare medical men with some of the younger bank officials and clerks, and then include all messengers who will correspond to some younger doctors who are working their thorny way along.

In Dr. Knopf's address 22 clergymen are scheduled as having been willing to anticipate that sad yet certain time when "the silver cord shall be loosed and the golden bowl broken." Yet these men are by profession believers in and teachers of the existence of immortality and should have a sure grip on the very foundations of the temple of that hereafter.

To just one other group I shall refer, viz.: statesmen. I would like to ask on what basis the classification of suicide among statesmen has been made, and to remark, incidentally, that not one has been missing in many a year.

That the strain of practicing medicine is greater than any other will, I think, be admitted by everyone. The lawyer, the engineer, the mining man, the seafaring man is responsible for a life or lives occasionally. The doctor in active practice is responsible for the comfort and welfare and even the life of many beings every day. When one considers the duties that doctors are called upon to perform and the average rate of the pay they receive, then indeed it is easy to understand that often with them "the wine of life is on the lees."

With the scheme outlined by the speaker for lessening or dividing this strain, I am in sympathy. It has been done already to some extent and is coming into practice a great deal more in recent times under the influence of collective medicine. It had begun before the war, following the example largely of one great clinic that had established itself on the western prairie. The war hastened it measurably, for then men worked together in the ranks, each taking a special division and thereby performing their duties better and more easily. Doctors will now be unwilling to go back to isolated and individual competition; and yet on the other hand, however, there is often no one else to do the work of the general practitioner.

Further, illnesses do not appear on schedule time. Business offices open at 9:30 and close at 5:00; drygoods stores open at 8:00, closing at 6:00. The lawyer may sometimes be compelled to work at night in preparation of his case, but if at the last moment he is not ready, the court may grant a postponement. This is not so with disease. One cannot have a case of croup or acute appendicitis postponed.

Dr. Knopf states that perhaps one reason why members of the medical profession furnish the greater number of suicides is their lack of a spiritual conception of life, a tendency to disbelief or agnosticism in things spiritual, an acceptance of the idea that the end of physical existence is the end of everything This is perhaps correct. Where there are three medical students, there are two atheists, is an old charge; to-day, alas, I am afraid it is not confined by any means to the doctors. The gross materialism of the world was perhaps never greater; its fine leaven of spiritual conceptions and beliefs perhaps never less. Unless there arise many Johns crying in the wilderness of greed, I fear indeed for our very civilization. Who the Johns shall be I do not now foresee, but when they come I feel sure they will not teach that it is perfectly scientific and rational to believe in immortality! That is just what to my mind it is not. Immortality cannot be proven by logic, and science only deals with the things that come to us through our senses. These are material things, and they argue neither for nor against the existence of a Supreme Being or a hereafter which He has prepared for us. The most rigid materialist, however, must acknowledge that even the truths of science are dynamic, not static, particularly in medicine where what is true to-day may to-morrow be discarded.

The Newtonian teachings, which we thought as eternal as the universe, have some of them at least suffered a severe shock at the hands of Einstein. Belief, on the other hand, belongs, as Steinmetz said the other day, and as was acknowledged by De Carte, Liebowitz and Von Helmholtz to an entirely different and unrelated activity of the mind: "All that is defective in our knowledge of spirit is that its properties are not manifested to the sense; but that is the very ground of its character and its essential distinction from matter, of which the sole character we can give is that is being of which the properties are manifested to sense." Spirit is conscious of itself and that consciousness is, I think, the sole ground of our belief in its being.

No; I think not only the doctors but the whole world needs a revival and a renewal of their spiritual beliefs. I recall an epitaph in one of George MacDonald's books:

Here lie I, Martin Elginbrod
Have Mercy on my soul, Lord God,
As I would have were I Lord God,
And ye were Martin Elginbrod.

Not blasphemous indeed, for surely we may expect from a Heavenly Father at least a measure of pity equal to that of an earthly father.

I repeat, that I have had much pleasure and some sadness in listening to Dr. Knopf's helpful and kindly paper, and I can only wish for him and for all doctors that when the day is waning into afternoon they may deserve the prayer uttered by his friend over Dr. William McClure: "Almighty God, dinna be hard in Wellum MacClure for he was never hard on anybody in Drumtochty. Be kind to him as he has been to us for forty years. We're sinners a' before thy sight, and gin he's dune anything wrang, dinna cuist it up tae him. Mind only the folk he's help it the weemin and the baernies and gie him a welcome hame, Lord, for he needs it sairly after all his work."

Hon. Alfred E. Ommen: Dr. Knopf said that of the 140,000 physicians in the United States in 1921 69 committed suicide. I think Dr. Stewart was right in doubting if here were 57 judges who committed suicide during the same year because it is my opinion that few die and few resign, and I don't believe that any of them ever commit suicide. They must have been lawyers. We will take it that Dr. Knopf meant lawyers and not judges. Sixty-nine doctors out of 140,000 is not a big percentage. It is less significant when we remember that the paper does not explain why they committed suicide. I don't believe they all committed suicide because of strain. Some of them may have been mentally unbalanced, some may have been intoxicated, some may have had auto-intoxication, some may have used drugs. So it is not a large percentage. These figures of 69 out of 140,000 are almost like those of the last election. It does not seem to me that it is so solemn a subject as we are making of it. Dr. Knopf warns phyisicians not to disagnose cases when over-tired. I have known doctors who could not make a disagnosis when they were not tired. I thought for awhile that Dr. Knopf was thinking of becoming a candidate for the United States Senate, for some of the things he said sounded like the tragic warnings Dr. Copeland used to give us. This discussion might as well be about any other profession or business. In this country there

is a great American strain, everyone is in a hurry, whether a bank president, a lawyer, or a tug-boat captain on the Hudson River, all are trying to do more things than they have time for. The average person in this country is hurried, day in and day out, and one reason is that it costs so much to live. In other countries where you do not have to pay as much rent, as much for food or for clothing, one can take his time and have some comfort out of life. Like the darkey in the South to whom the traveller getting off the train said: "Do you want to make a quarter?" Answered, "No, I have a quarter." We cannot apply this factor of strain only to lawyers or phyisicians or both. The doctor has a longer preparatory course but the qualifications are now practically parallel in severity. The difference is that the doctor remains a doctor, no matter what unseemly things he does, but a lawyer is sometimes disbarred, so this should help to lessen the strain on the doctors. I believe that the man who lives quietly and goes on serenely and has a touch of humor will not commit suicide. The question is what to do to relieve the great American strain. Until you reduce the cost of living you will find there will be suicides in every kind of business and profession, and no one of them will have any special monopoly. The subject of this evening is not so much medical as it is economic.

Dr. S. Dana Hubbard: In our studies of this subject of increasing suicides among professional men we have looked at it in a grave and serious manner. Of course, in trying to solve this problem we must not take ourselves or others too seriously. In a study of suicides in general, particularly when covering a long period years, you will find that financial reverses take a conspicuous place. In old age the suicide rate jumps. Very few people prepare for old age and those who have tried to frequently spend their nest egg speculating. Perhaps the best paper recently published on this subject is the one written by Hoffman (in the *Spectator*), who is a student of statistics and analyzes very finely. He gives facts only. It is a very difficult matter when these facts are limited to a few professions. Perhaps a mistake has been made in my classifying the professions. I have been studying this matter of suicide for close on to thirty years and have made careful drafts of the various conditions shown in the public reports. The most marked curve was late in 1907 and early 1908 when there was a great financial panic and many businesses failed. But throughout the country in those years there was the least number of suicides among physicians. When there was great financial prosperity, as there was last year, but also great unemployment and it was probably difficult for the physicians to collect fees, there was a marked increase in suicide among physicians. In 1913 there was a change in the national administration and also a marked increase in the number of suicides. In 1916 this country had fairly good financial prosperity and our curve showed a marked reduction. Nationality, race appears to affect our suicide curve. The Japanese consider suicide a noble death, and I believe the high suicide rate in California may be attributed to their holding this belief. Intelligence carries a very high point. In Southern States where there are many negroes we have a low rate of suicide. If we eliminate our colored population, you will find that New York compares favorably with California with its high rate. I do not believe the weather has much effect and I am certain that season has not, although I believe that many of our "accidental" drownings in the summer could be added to our suicide class. There are daily reports to the office of illuminating gas poisonings and it strikes me as irrational to accept those cases as all being accidental deaths. When it comes to a question of narcotics, our experience with 10,000 drug addicts where the medical profession was conspicuously prominent, the analysis shows that they are frequently represented, but the legal profession is marked for its absence. Familiarity in handling these drugs, no doubt, has made many of these physicians addicts. The suicide figures are high and they may be infinitely higher. There are suicides among highly trained, intelligent and aristocratic people that cannot be proven to be such because the fact has been concealed. If we could study them all and get at the reason we might find a remedy. Another interesting point is the method of these suicides among physicians. One would think that with their accessibility to narcotic drugs such men would seek an easy mode of exit from life, but we find the great majority have chosen hanging, shooting, stabbing and falling. I have lost three physician friends, personally known to me who have committed suicide in the last three years and each death has been attributed to other reasons. Yet one must be charitable. We have always considered self-murder somewhat of a reflection and we feel they were not in their right minds and are anxious not to let the world know the truth which would disgrace the name of one we cared for. I wish we could get our public records 100 per cent. perfect, but I fear that will never be. There are many millions of dollars placed in speculative investments by doctors and almost all is lost. A physician told me last week that he lost $10,000 last year in oil stocks. The mental attitude of the people toward stocks is peculiar; they will not seek advice and prefer to use their own judgment. The very best of these investment propositions will at times go astray. Then again, how many doctors become embarrassed in their professional efforts. I know of a man who took out the wrong eye of a patient lying unconscious under ether and when he realized he had made his patient blind he took his own life. I know of another doctor who put nitric acid in the eyes of a baby by mistake when the nurse handed it to him, and he killed himself. Then there are affairs of the heart. Overwork kills; irregular hours kill. If you want to find a high incidence of alcoholism and drug addiction, study the professions that have irregular hours and irregular meals. We often take ourselves too seriously. If we can go on an even keel, if we do our work the best we can, the world will continue to roll along and we won't be missed when we are gone. It is sad for the man who has worked hard and given his best to appreciate the fact that to-morrow he will be forgotten.

Dr. Robert T. Morris: Strain is a relative matter. Here in a civilized country your lives are secure. Among the American Indians there was incessant warfare. The same thing is going on in Africa; among wild tribes where neither life nor property are secure the strain is much greater than here in New York City within civilization's bounds and yet it is here that we find the suicides. If a man here feels the strain to the point where he is unable to stand it, something is wrong with that individual, not with his surroundings and the conditions of his existence. There are drug addicts, there are cases of auto-intoxication, to which Judge Ommen facetiously referred, but which I speak of seriously. There are many cases of auto-intoxication brought about by improper habits of living and because of the toxic effects of the poison on the brain cells, depressing action on the cerebral cells, the man is brought to an abnormal state of mind and body. The relative number of deaths in our professions from suicide seems to me also to be rather small, but in statistics of this sort we have a parallel in the death rates in some hospital reports. The death rate is not so important as the morbidity rates in some procedures. Therefore, we may say the morbidity rate as represented in distressing old age, from a feeling of failure in life, is very great, and there are many physicians too proud to accept kindness from relatives, many who have been too generous to others to have saved money, who are suffering to-day. They are not going to commit suicide; they have a pride in life, in action, they have been heroes in living and rendering service to the sick and suffering without thought of providing money enough for their old age. In this connection we have a physicians' home now under way. Dr. Knopf has given you an idea that we have asked the profession to contribute too largely in requesting them to provide $1.00 per year. We have asked for $10.00 per year and we have received enough money to secure a beautiful home in the country for a number of old physicians who are down and out and no longer able to support themselves and we are trying to take charge of a number more than have come to us as yet. We are going to ask the profession of the entire United States to support this idea of the physicians' home. We were afraid the men who applied to us would be men on the border line of respectability in the profession, but that is not the case. Several are men who stood high in mathematics and in the science of medicine rather than in its practice which brings emoluments sufficient for protection in old age. Hard work does not kill men in our profession if they have good health. And sometimes when one is ill hard work does not kill him.

I remember once being ill with grippe and I had gone to my home in the country to try to cure myself when I was called to the telephone at 11 o'clock at night and found I was badly needed for a patient who had been operated on for appendicitis and was dying. The father offered me $10,000 to attend his son and I got out my farmer and the horses and drove three miles to the train on a bitter cold night and got to the city. I discovered that the patient was suffering from iodoform poinsoning, in addition to shock, ordered the packing removed, and the boy recovered. The father refused to pay me anything on the ground that I had done nothing; the doctor who called me in sent me a check for $250 which I returned, and I let the whole matter drop. What did it matter? I had gained another experience. One must be a sportsman. The strain comes when there is illness from failure to live properly the right sort of life. If a man does not lead an ideal life here he does not know when he will get another chance. It is not essential for a man to commit himself too closely to his professional work in order to triumph in life. Triumphing in life means doing what Faust found to be best philosophy; the only thing worth living for was to render service to one's fellow man, and the one who has best learned what will lead him to glory, provided his health is good. Some of the best work ever done in this world has been done

by men who studied a very few cases thoroughly and got their results analytically. The strain is a relative matter. The idea is to live as ideal a life as possible in this world and that is only possible if one's health is good, and one's health will be good if life is planned out.

On the whole, the number of suicides among physicians is not larger than among other groups of men subjected to the same degree of strain, and that degree is relative. But there are those of us who have failed because of their health failing through no fault of their own and in their old age are in need of our help as good colleagues, and all of you people are going to contribute every year to the care of these most worthy men whom we, as responsible members of the medical profession and officers of the Physicians' Home, want you to care for.

Rev. Dr. Harry Marsh Warren: For several years I was the pastor of a church in this city. During that time I observed that many people, including some of my own parishioners, went out of life by their own hand. This led to my interest in the Save A Life League which was organized some ten years ago. We have had over five thousand people at our headquarters in the last six years, tired and weary of life. We have also heard from many thousands of would-be suicides in all parts of the world. There is a type of case many of which have come to our attention and which we call "Affinity Cases." We tell them their case is not unusual, warn them how dangerous it is, and foretell that in a year's time they will wonder how they could have been so foolish. I have written out fourteen suggestions why it is wrong to end one's life. They are what you would say to anyone. It is a great thing to know where one can go to open his heart; members of many churches have been represented, for some will not go to their own pastor, but they will go to a stranger. I have often said that if I could get some philanthropists to go with me to the morgue and view the pitiful body of the suicide lying there, or to the funeral of some splendid young man or woman who has felt it impossible to go on living, or to the home where such a tragedy has taken place, that he would say: "Let us do anything we can to prevent suicide."

In dealing with these people we have felt for their sorrows, sympathized with their troubles, been absorbed in the seriousness of the situation. There are unfortunate girls who have never heard of a maternity hospital and who think the only way out of their trouble is to drown in the Hudson River. We have been able to tell them where to go to be helped and spared shame and disgrace. In one case we advised a young man who had taken money to go to his father and mother for help as we felt that he being the first born was most precious to them and they would save him from disgrace and the suicide he threatened. We have a clipping bureau and we try in this and other ways to keep track of the number of suicides and trace the causes. It is true that many suicides, as Dr. Hubbard says, are covered up and the cause of death attributed to accident or illness, but who can blame those who thus seek to shield their friends? If there are 20,000 suicides in this country every year, there are probably as many more that are not reported as such, or who may have made unsuccessful attempts because suicide is more common than we have any idea of. Who is there who has not had the suggestion of suicide within himself? Many physicians are associated with the Save-a-Life League. Dr. Thomas W. Salmon has written this: "Most suicides are preventable. I endorse very heartily the Save-a-Life League with whose work I have been familiar for five years."

If I could live my life over again and choose my profession I might be a physician. As a minister I bring the religious life to these people, and usually pray with them, and this has a psychological effect as well as a spiritual one. We have known several physicians who were contemplating suicide. I recall a case I had last year, a young Jewish medical student. In our efforts to prevent suicide we make no distinction between Catholic, Jew and Protestant. In order to pay for his tuition and other expenses he had made a number of loans, and they were pressing him for the money which he could not pay, and he had decided to commit suicide. The money was provided and the young man finished his studies and is now showing a very special ability in his profession. Here was a life that was well worth saving, and there are many more just like him that could be saved for years of usefulness and happiness if proper and timely aid were given them.

The time has come when we should do as much to save a suicide as we now do to safeguard property or to prevent tuberculosis or white slavery. We should hasten to the rescue of the suicide as we now instinctively, speedily and eagerly seek to save a drowning man or one from a burning building.

Burk was right when he said:

"Our time is fixed, and all our days are numbered.
How long, how short, we know not; this we know,
Duty requires we calmly wait the summons,
Nor dare to stir till Heaven shall give permission."

Dr. Knopf: Surely the prevention of suicide among the medical and legal professions is a seroius subject. As to considering the subject of minor importance because in the opinion of some of the speakers the percentage of suicide among physicians and lawyers is apparently small. I for one believe suicides to be preventable and the quality of the men who abruptly finish their existence is as important a consideration as the quantity.

I am grateful for the sympathetic and hopeful remarks of Dr. Stewart, but I cannot quite agree with his belief in a strict division between science and religion, nor with Charles P. Steinmetz, the great electrical genius, whom he quotes as authority in this matter and who makes the same distinction. In my opinion the spiritual and material are not quite as far apart as some of us seem to think.

Dr. John H. Finley, in a recent article entitled "A New Spiritual Century in Contrast with the Old," speaks of a prominent American chemist who, at an international meeting of chemists last year, said that there was something that could not be explained on a purely materialistic hypothesis. He divined a catalytic spiritual force which is beyond the reach of any human analysis, but which, like the physical catalyst, "speeds up" the power which lies beyond the force that is measurable in watts or volts, or that shows itself in some chemical reaction. I go even further and freely confess that I am not only convinced of a higher spiritual force beyond the reach of any human analysis, but also of the immortality of the soul and the continuity of individual existence.

There seems to be no difference of opinion between Dr. Stewart and myself concerning the disbelief in higher things among medical students when he quotes the saying that where there are three medical students there are two atheists. I am inclined to believe, however, that among American medical students the percentage is not quite as high as that.

Judge Ommen was mistaken when he said that there were not 57 judges who committed suicide but 57 lawyers. I distinctly said pudges, which after all would prove that the percentage of suicides among judges was high compared with other callings.

The Judge's concluding remark that everybody suffers from the same strain as doctors, I cannot accept because statistics show that members of certain professions and callings are less apt to end their existence abruptly than others.

I am grateful to Dr. Morris for his optimistic view of life and for taking serious disappointments philosophically. He has been an unusually successful surgeon and as an idealist looks upon life as I wish we all could. But I am glad that he agrees with me that even when a physician works hard and takes his disappointments like a sportsman, he is not at all sure when old age comes that he will be free from anxiety and worry and be sure of a roof over his head. He knows that some of us will not be as fortunate as he, that there will be some who in spite of hard work and honest endeavor will be virtually penniless when old age comes, and that there should be a home for those brave men. It is to Dr. Morris' credit that he has devoted so much of his energy, his wealth and enthusiasm to the founding of an old physicians' home.

I was delighted to hear the Rev. Dr. Warren speak of his "Save-a-Life Legion" which has done such good work. If, as he says, there are 20,000 suicides in this country every year and probably as many more which are not reported as such, the work he is doing cannot but receive our highest commendation and help. Since suicide is preventable, it behooves all of us to help in its prevention, not only among our professions but wherever and whenever we can.

Why Not Go to the American Medical Association Convention at San Francisco by Water

The thought is advanced for those fellows of the American Medical Association in the eastern part of the United States that one very pleasant and attractive way to attend the convention in San Francisco, June 25 to 29, is to go by boat from any eastern United States port through the Panama Canal to San Francisco, or come as far as San Diego by boat and make the rest of the trip by train or motor through the beautiful valleys of California.

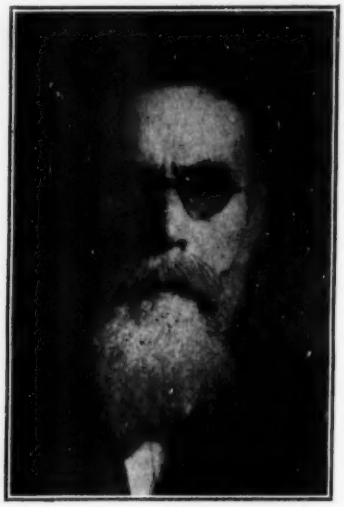
Details of trips of this kind will be furnished, of course, by any steamship office anywhere, and for those who have the time to spare certainly no more delightful trip could be planned.

It will be easy enough for those who desire to secure their transportation, one way by water and the other by rail. A wide latitude in routes crossing the continent will be outlined by any railroad ticket office.

Persons interested in methods of transportation or in any other question whatever character regarding the convention are invited to write to W. E. Musgrave, chairman of the California Committee of Arrangements, 806-809 Balboa Building, San Francisco.

Prof. Dr. Wilhelm Konrad Rontgen

The discoverer of *X*-rays died in Munich, February 10, aged 78 years. Prof. Röntgen, who owed so much of his success to the photographic lens, was an obstinate enemy to the camera, as far



as his own person was concerned. For the last two decades of his life photographers of all countries urged him in vain to sit for a portrait. He also succeeded in dodging the newspaper photographers who were, at times, waiting in front of his Munich home to get a snap-shot of him. The portrait herewith was taken by one of his assistants in July, 1921, for use upon a passeport Prof. Röntgen needed for a trip to Switzerland. Only a few copies were made, and the plate was destroyed.

Public Health

Malnutrition a Serious Problem

At least 20 and according to some estimates possibly 33 per cent. of the school children of the United States are suffering from malnutrition, as general physical underdevelopment is commonly designated, says the advisory committee on foods and nutrition of the National Child Health Council in a report that will soon be published by the U. S. Public Health Service, which co-operated in its preparation.

Malnutrition, continues the report, is not confined to any one class or race; in some cities it is apparently as prevalent in the homes of the well to do than in those of persons of more limited means. The condition is evidenced, not only by weight and growth records but also by listlessness, lack of color, dullness, and sometimes by restlessness and irritability.

It is due chiefly to physical defects, faulty habits or environment. Of physical defects the most common are obstructions (adenoids, for instance) in the nose or throat, which interfere with breathing; and decayed teeth, which breed germs and interfere with chewing. When such defects are remedied many children will develop normally.

Faulty food and health habits are also important causes of malnutrition. They include too little food, the wrong kind of food, and bad food habits, whether due to ignorance, poverty, or lack of home discipline; and also faulty posture in standing, sitting or walking, all of which interfere with the normal functioning of important organs of the body. Such habits can be corrected by proper exercises, which, however, should be carefully controlled as otherwise they may prove harmful.

Environmental conditions, which interfere with sufficient sleep, lack of fresh air, and even constant nagging may cause underdevelopment and their correction may result in remarkable gains.

Cases of malnutrition that do not yield to simple corrective measures may require prolonged medical supervision; and, in any event, preventive measures are much better than curative ones. Health education in the schools will go a long way toward preventing malnutrition, not only in the pupils themselves but will also, if the results are brougth energetically to the attention of parents, usually react to the benefit of younger children of pre-school age. And the younger the child the more easily are proper health habits learned and the more valuable they are.

Health education may also be spread by well-qualified speakers, by magazine articles, moving pictures, health plays, and exhibits that vividly bring home the results of malnutrition and the often amazing improvements derived from corrective measures.

In this connection may be instanced the news just received by the U. S. Public Health Service of the very marked success of a nutrition exhibit sent by it to Brazil as a part of the International Centennial Exposition now in progress at Rio de Janeiro. This exhibit consists of two tables, at each of which two large dolls supposed ten years of age sit at dinner. The meals spread for them look equally appetizing. One of them, however, includes no milk, no green vegetables, and no fresh fruits. The dolls at this table are a little better dressed than those at the other table; but their faces, though they still show evidences of former beauty, are colorless, and their eyes are dull and underlined heavily with dark half-moons. The dolls at the other table, on the other hand, are rosy cheeked, bright, and laughing.

The effect, both on parents and children, was very striking. Day after day the space before the exhibit was crowded by mothers or teachers, pointing out to wide-eyed children the difference in the appearance of the "children" (dolls), who drank milk and ate proper food and those who did not. And a very large proportion of the adult visitors came back again and again bringing other children with them.

Diphtheria Prevention Among Children of Preschool Age

The campaign of last summer, reported by Abraham Zingher, New York, to reach the children of preschool age was a logical sequence to the extensive work that was carried out in the public schools of New York City. More than 800,000 homes had been reached with the literature on diphtheria prevention. In the boroughs of Manhattan and the Bronx alone, about 150,000 school children were given the Shick test, and those showing a positive recation received the injections of toxin-antitoxin. An almost equal number were tested in Brooklyn and Queens. Repeated newspaper publicity had also been of some value. In most of the homes in which there were children, the parents knew what modern diphtheria prevention meant. Many of them asked us where they could take their younger children to have them immunized against diphtheria. The work among children of preschool age, including those between 6 months and 6 years of age, was started July 1, and carried out during the months of July and August and the first two weeks of September. In Manhattan and the Bronx, the injections were given in all the baby health stations of the department of health, in five similar stations of the New York Diet Kitchen Association, and in many of the mothers and babies' playgrounds located during the summer in the play yards of the public schools.

This campaign led to the following conclusions: (1) The active immunization with toxin-antitoxin of all children of preschool age (from 6 months to 6 years) is of fundamental importance in any general campaign of diphtheria prevention and control. (2) To reach these young children, the health officer can utilize, in larger cities, the baby health stations, day nurseries, mothers and babies' playgrounds, infant asylums, clinics for children, and similar agencies. (3) It is of even greater importance to have private physicians take up this work among the young children in their private practice. (4) Preliminary work in the schools will help by spreading in the homes the knowledge of these newer methods of diphtheria prevention. (5) The high percentage of positive Schick reactions among children of preschool age indicates, under many conditions, the advisability of simplifying the procedure of immunization by omitting the preliminary Schick test in this group and giving the toxin-antitoxin injections to all children between 6 months and 6 years of age. These children should not be pronounced immune to diphtheria after the injections of toxin-antitonix until they show a negative Schick reaction. This test might be carried out conveniently by the school physician when the children begin to go to school. (6) The injections of toxin-antitoxin produce very little local or constitutional disturbance in young children.—(*J. A. M. A.*)

Work of the Eye Sight Conservation Council of America

Election of Secretary James J. Davis, of the U. S. Department of Labor, and of Prof. F. C. Caldwell, of the Department of Electrical Engineering of Ohio State University, as councillors and directors of the Eye Sight Conservation Council of America is announced at the national headquarters of the Council in New York City by Guy A. Henry, General-Director.

Secretary Davis and Prof. Caldwell will participate with other prominent educators, economists, engineers, public officials and civic leaders in the Council's nationwide activity in behalf of conservation of vision in education and industry. Disclosures made by the Hoover Committee on the Elimination of Waste in Industry showed that poor eyesight among the workers was causing heavy annual economic losses. Surveys in numerous cities have revealed similar conditions of vision in the schools.

To remedy this situation is a national duty, Secretary Davis declares in a statement made public by the Council. "In my